AN EMPIRICAL EXAMINATION OF THE STRATEGIC DECISION-MAKING PROCESS: THE RELATIONSHIPS BETWEEN CONTEXT, PROCESS, AND OUTCOMES

NEIL GARETH SHEPHERD

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THESIS SUMMARY

Despite concerted academic interest in the strategic decision-making process (SDMP) since the 1980s, a coherent body of theory capable of guiding practice has not materialised. This is because many prior studies focus only on a single process characteristic, often rationality or comprehensiveness, and have paid insufficient attention to context. To further develop theory, research is required which examines: (i) the influence of context from multiple theoretical perspectives (e.g. upper echelons, environmental determinism); (ii) different process characteristics from both synoptic formal (e.g. rationality) and political incremental (e.g. politics) perspectives, and; (iii) the effects of context and process characteristics on a range of SDMP outcomes.

Using data from 30 interviews and 357 questionnaires, this thesis addresses several opportunities for theory development by testing an integrative model which incorporates: (i) five SDMP characteristics representing both synoptic formal (procedural rationality, comprehensiveness, and behavioural integration) and political incremental (intuition, and political behaviour) perspectives; (ii) four SDMP outcome variables—strategic decision (SD) quality, implementation success, commitment, and SD speed, and; (iii) contextual variables from the four theoretical perspectives—upper echelons, SD-specific characteristics, environmental determinism, and firm characteristics.

The present study makes several substantial and original contributions to knowledge. First, it provides empirical evidence of the contextual boundary conditions under which intuition and political behaviour positively influence SDMP outcomes. Second, it establishes the predominance of the upper echelons perspective; with TMT variables explaining significantly more variance in SDMP characteristics than SD specific characteristics, the external environment, and firm characteristics. A newly developed measure of top management team expertise also demonstrates highly significant direct and indirect effects on the SDMP. Finally, it is evident that SDMP characteristics and contextual variables influence a number of SDMP outcomes, not just overall SD quality, but also implementation success, commitment, and SD speed.

KEYWORDS:
Strategic Decision, Decision Making, Decision Process, Context, Top Management Team

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And finally, recently a senior executive said to me: 'you've studied decision-making for several years, so what would be your advice to executives like myself when faced with a major decision?' I replied: 'that's easy, always listen to your Mum—she knows best'.

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CONTENTS

TABLES

FIGURES

CHAPTER 1 – INTRODUCTION

1.1 Introduction

This chapter provides an introduction to the thesis, and is divided into 6 sections. In section 1.1 strategic decisions are defined and their characteristics are discussed. Section 1.2 provides a brief overview of SDMP research and its origins, and section 1.3 explains the specific research questions that this thesis sets out to answer. Section 1.4 outlines the research design followed in the present study. Section 1.5 provides an overview of the structure of this thesis, and finally, section 1.6 summarises this chapter.

1.1.2 Defining a Strategic Decision

Decision-making is cited as being *the* most central and core activity of management (Barnard, 1938; Simon, 1957) and Papadakis and Barwise (1997a, p.2) state that strategic decisions (SDs) in particular are of critical importance because they have the following characteristics:

(i) They entail the commitment of substantial resources, are hard to reverse, and have major long-term implications;

(ii) They very often lead to changes in the organisation's structures, processes, and strategic positioning;

(iii) They are novel, ill-structured, complex, interdependent issues with high stakes and high uncertainty, and;

(iv) They take up much of the time of the top management team (TMT), even in large highly diversified organisations where strategic projects may be initiated by middle-managers; the TMT still has a direct role in specific SDs.

Whilst SDs are not *always* entirely different from other types of organizational decision, they "are towards one end of a continuum, at the other end of which are the trivial everyday questions." (Hickson et al. 1986, p.27). Dean and Sharfman (1993a, p.594) state that SDs differ from routine operational decisions because they have "a major impact on the firm's future". It should also be noted that a decision which is considered to be strategic in one organization may not be considered strategic in another (Hickson et al. 1986). Such differences typically occur across industries. For example, the decision to launch a new product for a single product organisation such as WD-40 would be considered a strategic one, whereas the same decision for a multi-product organisation such as Unilever would not be. Finally, SDs play a vital role in both emergent and deliberate strategy (Mintzberg and Waters, 1985). The formulation of deliberate strategy is a strategic decision-making process (SDMP) itself, and once the deliberate strategy is implemented this creates waves of more specific SDs in order to implement it. Emergent strategy comprises unplanned SDs taken in response to unforeseen opportunities and threats, and hence the emergent strategy is a consequence of a series of SDs (Papadakis and Barwise, 1997a).

To ensure consistency with the SDMP literature, this thesis adopts an ontological framework whereby the concept of a decision is viewed as valuable for understanding aspects of organizational behaviour (Miller, 2010). However, certain authors (e.g. Mintzberg and Waters, 1990) suggest that examining decisions can be a hindrance to understanding organizational processes, because individual decisions can be troublesome to identify. Mintzberg and Waters (1990) suggest that actions can occur without a formal decision having been made, and organizations can take a particular course of action in response to the external environment, rather than as a result of a systematic decision process. Ultimately, whether decisions are suitable subjects for empirical enquiry or not, and whether researchers can obtain objective knowledge of decision processes, rests upon the ontology of the researcher (Pettigrew, 1990). The position taken in this thesis is consistent with many of the empirical SDMP studies (e.g. Dean and Sharfman, 1993a; 1993b; 1996; Eisenhardt, 1989; Elbanna and Child, 2007a; 2007b; Fredrickson, 1984; Fredrickson and Mitchell, 1984; Hickson et al. 1986; Hitt and

Tyler, 1990; Judge and Miller, 1991; Papadakis et al. 1998) and assumes that an understanding of SDMPs is possible, and is useful for explaining differences in organizational performance.

The ability to make high quality SDs is of critical importance because of their implications for an organisation's long-term health and survival. However, this is no easy task in the present economic environment, which is characterised by limited growth opportunities, increasingly fierce competition, shortening product life cycles, rapid technological innovation, and economic turbulence (Nadkarni and Herrmann, 2010). Such economic conditions present a surfeit of information for decision-makers to process, often under severe time and resource constraints (Hodgkinson et al. 2009), and in hostile environments, one false move can risk the organisation's very survival. Therefore, when making SDs, TMTs not only have to contend with the hostility and uncertainty that typify modern day business environments; but they must also cope with limited, contradictory or incomplete information. Furthermore, in many SDs, the TMT must navigate the power struggles and politics of high-stakes decision-making.

Despite the importance of SDMP research, and notwithstanding the significant contributions that have already been made to this domain of literature, several significant opportunities for theory development exist. Elbanna and Child (2007a, p.431) state "previous research into the strategic decision-making process has produced some inconsistent findings. This may be due to the application of oversimplified models to a complex phenomenon." The present study sets out to address several of the most important gaps in the SDMP literature, which were identified through a critical literature review (see chapters 2 and 3), and are discussed in section 1.2.2 of this chapter.

1.2 Strategic Decision-Making Process Research

This section explains the origins of the SDMP domain of literature, and provides an overview of the major themes in the SDMP literature.

1.2.1 Origins of SDMP Research

While *strategic* decision-making is a relatively recent concept, the origins of the strategy discipline date back many hundreds of years. For example, the Chinese military writer Sun Tzu (circa 500BC) described the strategy of warfare, and Machiavelli (circa 1513) wrote about the strategy of running Italian states. Indeed, Carter et al. (2008) argue that many of the concepts inherent in Machiavelli's work pervade the strategy literature today, and also state that "the influence of military planning on strategy cannot be emphasized enough." However, Chandler (1962) is credited with shifting academic focus onto strategy and away from planning. Thus, the concept of strategy in management theory is relatively nascent. It has been suggested that this change of scholarly interest was due to the negative connotations of planning, owing to its association with communist states and several high profile corporate failures (Carter et al. 2008). Chandler (1962, p.15) defines strategy "as the determination of the basic long-term goals and objectives of an enterprise, and the adoption of courses of action and the allocation of resources necessary for carrying out these goals." This is a definition still commonly used today (Carter et al. 2008).

Strategy research has developed into two streams, strategy *content* research, and strategy *process* research. Strategy content research deals with the substance of the decision such as mergers, diversification, and portfolio management (Elbanna, 2006); whereas strategy *process* research is concerned with the sequence of activities that lead to a commitment to a course of action (Papadakis and Barwise, 2002), and the factors that affect the process (Schwenk, 1995). In their 1993 literature review, Rajagopalan et al. asserted that whilst strategy content research had been the subject of extensive empirical work, strategy process research had received a good deal less attention.

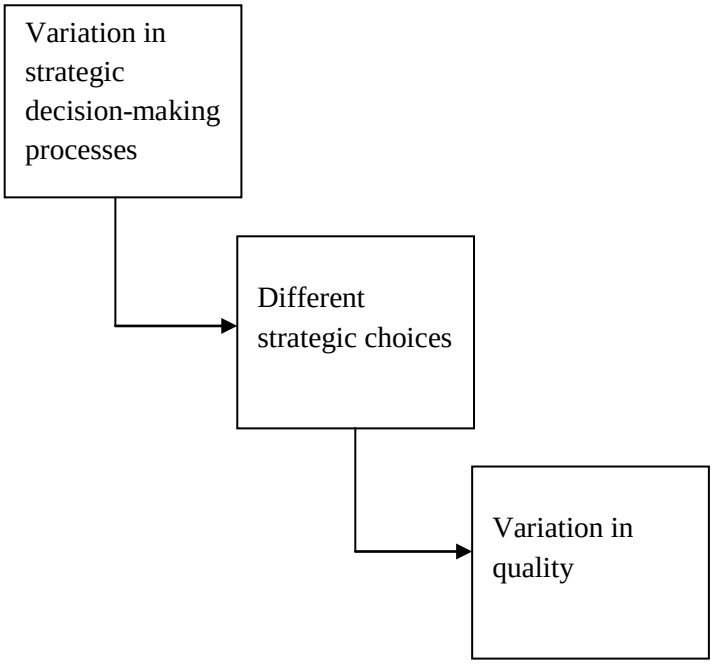
Notwithstanding the progress that strategy process research has made in the two decades since Rajagopalan et al's (1993) literature review, there remain numerous unexplored areas and contradictory findings which necessitate further empirical research (Papadakis et al. 2010; Elbanna, 2006).

1.2.2 SDMP Research

Having briefly considered the origins of SDMP research, this sub-section provides an overview of the major themes in the SDMP literature. These include characterising the SDMP, the implications of different SDMP characteristics for SDMP outcomes, and the role of context as both an antecedent of SDMP characteristics and as a moderator of the relationships between SDMP characteristics and outcomes.

Decision-making is a process, which "involves choices concerning the likelihood of uncertain events...in situations in which we make predictions about the future, select among two or more alternatives, or make estimates" (Matlin, 1989, p.415). The SDMP is of critical importance (see figure 1.2), because empirical evidence has shown that different decision processes lead to TMTs making different choices, and not all choices are equal; some are better than others (Dean and Sharfman, 1996).

Figure 1.2 Assumptions Underlying the SDMP Characteristics-Outcomes Relationship (Adapted from Dean and Sharfman, 1996).



The SDMP has been described as a sequence of activities and as a set of different characteristics (Papadakis and Barwise, 2002). Schwenk (1995) conceptualises the SDMP as consisting of: (i) the identification phase, where opportunities and threats are recognised and relevant information is collected; (ii) the development phase, where alternative solutions are generated, and; (iii) the selection phase, where alternative solutions are evaluated until one is settled upon, and a final commitment to action is made. Mintzberg (1976) highlights the iterative nature of such processes as decision-makers often recycle back to earlier stages to collect further information and re-examine assumptions. However, a large and growing body of literature describes the SDMP according to its characteristics or dimensions, and some of the most commonly examined ones include rationality, comprehensiveness, political behaviour, and more recently, intuition and behavioural integration (Fredrickson 1984; Fredrickson and Mitchell, 1984; Eisenhardt and Bourgeois 1988; Bourgeois and Eisenhardt 1988; Eisenhardt, 1989; Dean and Sharfman, 1993a; 1996; Simsek et al. 2005; Elbanna, 2006; Carmeli and Schaubroeck, 2006; Lubatkin et al. 2006; Elbanna and Child, 2007a; 2007b;

Elbanna et al. 2012). Although many more have also been studied, such as problem solving dissension, lateral communication, formalization, hierarchical decentralization, sporadic, fluid, constricted, conflict, and flexibility (e.g. Hickson et al. 1986; Amason 1996; Sharfman and Dean, 1997a; Papadakis et al. 1998; Olson et al. 2007a; 2007b).

The implications of different SDMP characteristics for different outcomes, such as organisational performance and SD effectiveness (e.g. Dean and Sharfman, 1996; Eisenhardt, 1989; Elbanna and Child, 2007a; Fredrickson 1984; Fredrickson and Mitchell, 1984) have been studied, although contradictory findings have emerged. For example, comprehensiveness has been found to positively influence organisational performance in high velocity environments (Bourgeois and Eisenhardt, 1988; Eisenhardt, 1989), but negatively impact on organisational performance in unstable environments (Fredrickson, 1984; Fredrickson and Mitchell, 1984). Similarly, Goll and Rasheed (2005) find that rationality is positively related to organisational performance in munificent environments, whereas Elbanna and Child (2007a) show that rationality is positively related to SD effectiveness in hostile environments. Notwithstanding the differences in levels of analysis and operationalisation of constructs in these studies, it is clear that no consensus yet exists concerning the effects of SDMP characteristics on SDMP outcomes and how contextual variables, such as the external environment, influence these relationships. Furthermore, there is scant empirical evidence concerning the effects of SDMP characteristics such as intuition and political behaviour on SDMP outcomes (Papadakis et al. 2010; Elbanna and Child, 2007a; Elbanna, 2006) despite these constructs portraying the SDMP in a more realistic light, by capturing the social aspects of SDM, which rationality or comprehensiveness cannot (Eisenhardt and Zbaracki, 1992). Finally, the SDMP literature has focused largely on economic outcomes, such as organisational performance, yet there are other much less frequently studied outcomes such as speed, commitment, and decision quality that are cited as being of great importance to practitioners (Papadakis and Barwise, 1997c; Rajagopalan et a. 1993). The effects of SDMP characteristics on these non-economic outcomes are largely unknown.

The SDMP is significantly influenced by the context in which it takes place (Papadakis et al. 1998), and any understanding of the SDMP is incomplete and arguably inaccurate, without attention being paid to the role of context (Hough and White, 2003). Extant SDMP research has identified four categories of contextual variables that both directly affect the characteristics of the SDMP, and also interact with SDMP characteristics to influence SDMP outcomes (Sharfman and Dean, 1997b; Papadakis et al, 1998; Papadakis and Barwise, 2002; Elbanna and Child, 2007a; 2007b). These four categories of contextual variables are associated with four different theoretical perspectives (Elbanna and Child, 2007b):

(i) The TMT is associated with the upper echelons perspective (Hambrick and Mason, 1984) or strategic choice perspective (Child, 2002), which views the SDMP as being heavily subject to the cognitive and behavioural traits of the TMT;

(ii) The external environment is associated with the environmental determinism perspective (Aldrich 1979; Hannan and Freeman 1977), which posits that the SDMP is significantly shaped by the factors at play in the firm's external environment;

(iii) A third perspective exists, which views the specific characteristics of the SD being made as an important contextual influence on the SDMP, and;

(iv) The final perspective views the characteristics of the firm as being a major factor affecting the SDMP.

Thus, the TMT, the external environment, SD specific characteristics, and firm characteristics make up the four categories of contextual variables that influence the SDMP, both directly and indirectly. However, few studies have combined all four theoretical perspectives in order to test their relative importance for explaining variance in SDMP characteristics, and hence it remains unclear which theoretical perspective is the most pertinent for explaining SDMP characteristics. Furthermore, there is very limited empirical evidence concerning the moderating influence of contextual variables on the relationships between SDMP characteristics and SDMP outcomes (Papadakis et al. 2010).

The preceding discussion has provided a definition of the SDMP, an overview of the origins of the SDMP domain of literature, and identified the major themes contained within it. Whilst the SDMP literature is reviewed in detail in chapters 2 and 3 of this thesis, the preceding discussion highlights some of the important gaps in the literature which the present study sets out to address by: (i) Examining intuition, in order to portray the SDMP in a more realistic light (Eisenhardt and Zbaracki, 1992; Khatri and Ng, 2000; Hodgkinson et al. 2009; Sinclair et al. 2009) and recognising that decision-makers are boundedly rational (Simon, 1957) and do not always follow rational or comprehensive SDMPs; (ii) integrating all four categories of contextual variables (TMT, SD specific characteristics, the external environment, and firm characteristics) to determine the most significant influences on the SDMP (Hitt and Tyler, 1991; Rajagopalan et al., 1993; Papadakis and Barwise, 1997c; Brouthers et al., 2000; Child et al., 2003); (iii) paying particular attention to the TMT, to complement the existing empirical research that has adopted an integrative approach to modelling the SDMP (Elbanna and Child, 2007a; 2007b), using psychometric variables as opposed to demographic proxies—which have been criticised for a lack of construct validity (Lawrence, 1997; Priem et al. 1999; Hough and ogilvie, 2005), and; (iv) examining how multiple different SDMP characteristics affect multiple different and important decision outcomes, other than just economic performance (Eisenhardt and Zbaracki, 1992; Papadakis and Barwise, 1997b), because non-economic outcomes such as commitment, implementation success, speed, and SD quality are vitally important to managers and for the overall performance of their organisations (Papadakis and Barwise, 1997c; Rajagopalan et al. 1993).

1.3 Research Questions

Using data from 30 semi-structured interviews and 357 questionnaires, this thesis aims to answer the following research questions, which directly address the gaps in the literature set out in section 1.2.2 of this chapter:

1. Which theoretical perspectives out of the TMT, SD specific characteristics, the external environment, and firm characteristics have the most significant influence on the characteristics of the SDMP?

2. What are the effects of the different SDMP characteristics on SDMP outcomes; not just SD quality, but also implementation success, commitment, and SD speed?

3. Do implementation success, commitment, and SD speed mediate the effects of context and SDMP characteristics on SD quality?

4. What are the boundary conditions for intuition to significantly and positively influence SD quality?

5. What are the moderating effects of the TMT on the relationships between political behaviour and SDMP outcomes?

6. What are the moderating effects of the external environment on the relationship between SD speed and SD quality?

Therefore, the present study contributes to knowledge in the SDMP domain by developing and testing a conceptual model which integrates:

- Five SDMP characteristics (procedural rationality, comprehensiveness, behavioural integration, intuition, and political behaviour);
- Four SDMP outcomes (SD quality, implementation success, commitment, and SD speed);
- Contextual variables from each of the four theoretical perspectives, namely: the TMT (expertise, cognitive diversity, and power decentralisation); SD specific characteristics (familiarity, time pressure, uncertainty, and magnitude of impact); the external environment (hostility-munificence and dynamism), and; firm characteristics (external control, size, past performance, and slack resources). These contextual variables are modelled as both

antecedents and moderators in order to achieve a more complete portrayal of the SDMP, and to resolve some of the inconsistencies of previous studies.

This research has significant implications for practice; and the insights developed may help TMTs to better understand not only the implications of contextual factors when they are making SDs; but also the effects of different SDMP characteristics on SDMP outcomes.

1.4 Research Design

There is no one ideal method for data collection and analysis, because every research problem is unique, and all require an individually adapted approach with different emphasis (Churchill and Iacobucci, 2005). However, techniques in the strategy domain are generally drawn from either a qualitative or quantitative base (Hammersley, 1992). Furthermore, a combination of these two approaches is often utilised in an attempt to overcome the inherent limitations of each approach (Brewer and Hunter, 1989). Also, utilising mixed methods in data collection can lead to more valid results (Jick, 1979). An in-depth discussion of the methodological choices made for the present research is presented in chapter 5 of this thesis. However, in brief, a mixed-methods or a multi-method field study (Snow and Thomas, 1994) approach incorporating both qualitative and quantitative methods was utilised in order to address the research questions. The methods adopted were tailored in order to address the specific issues arising at each phase of the research process (see table 1.4).

The data collection process comprised two distinct phases. The first phase was qualitative, and it addressed domain level issues and aided in the development of a new construct (TMT expertise, which is addressed separately in chapter 7). The second phase was quantitative and centred on the development and subsequent testing of the survey instrument.

Table 1.4 Summary of Research Methods and Objectives

Phase	Research Method	Sample Size	Objectives	Analysis
1.1	Qualitative semi-structured interviews	30 TMT members (CEOs/MDs/Chairman/Chief Officers/Directors)	1. Understanding of research area 2. Clarify terminology 3. Discussion of SDMP to develop understanding of synoptic-formalism and political-incrementalism in practice, together with informant's perceptions of the influence of context 4. Item generation	1. Manual coding and thematic analysis
1.2	Expert analysis of items generated	2 TMT members and 4 academic experts	Refinement of item pool	Manual sorting of items/manual analysis of results
2.1	Pre-testing of survey instrument through think aloud protocol interviews	4 MDs	Issues of clarity, engagement, questions of flow and length	Manual notation
2.2	Pre-testing of survey instrument through pilot study	71 TMT members (CEOs/MDs/Chairman/Chief Officers/Directors)	Identification of wording and scale issues	Reliability and validity, assessment of the constructs under investigation
2.3	Main quantitative data collection	169 main informants and 117 second informants (CEOs/MDs/Chairman/ Chief Officers/Directors)	Examination of hypotheses	Multiple moderated hierarchical regression analysis

1.5 Structure of the Thesis

The remainder of this thesis consists of four main parts: (i) a review of the relevant literature pertaining to SDMP characteristics, outcomes and contextual variables; (ii) the development and explication of an integrative model of the SDMP together with a set of testable hypotheses; (iii) a

discussion of the research design and methodology, and; (iv) the results and conclusions arising from the study.

This thesis consists of 9 chapters, including the current one (see Figure 1.5). Chapter 2 reviews the SDMP literature concentrating on SDMP characteristics, including rationality, comprehensiveness, behavioural integration, intuition, and political behaviour. The focus of chapter 2 is on emphasising the importance of combining multiple SDMP characteristics, as the SDMP is multi-dimensional and no one single characteristic alone is adequate. Additionally, chapter 2 describes a recent surge in academic interest in intuition, as a characteristic of the SDMP, and incorporates insights from related domains of literature such as social-psychology.

Chapter 3 reviews the SDMP literature with a focus on the influence of context, to discern the importance of four theoretical perspectives (and the contextual variables associated with each perspective) for explaining variance in the characteristics and outcomes of the SDMP. This chapter highlights a lack of empirical testing of integrative SDMP models. The significance of the TMT is highlighted, and relevant literature from other domains is incorporated to argue how TMT expertise is an overlooked variable in the SDMP literature, yet one which has significant potential for explaining both SDMP characteristics and outcomes. Finally, from the literature reviewed in chapter 2 and 3 a number of conceptual and methodological priorities for future research are raised.

Chapter 4 articulates in detail the theoretical rationale for the integrative conceptual model which is tested in the present study. This chapter explains how the integrative model addresses conceptual and methodological recommendations made in prior empirical research, and the findings from the exploratory qualitative phase are also incorporated in order to develop a set of testable hypotheses.

Chapter 5 addresses the methodological challenges of the present study. The quantitative phase, which comprised a pilot study and subsequent main data collection, is described in detail. The overall focus in this chapter is on describing and justifying the approaches employed in this study, to ensure that the data and methods used met the most stringent tests of validity and reliability. The operationalisations of all variables to be tested are presented, and the main instrument of administration, the questionnaire, is discussed at length. The questionnaire pre-testing is also explained as well as the alterations that were made in light of this. Response rates are also described in some length.

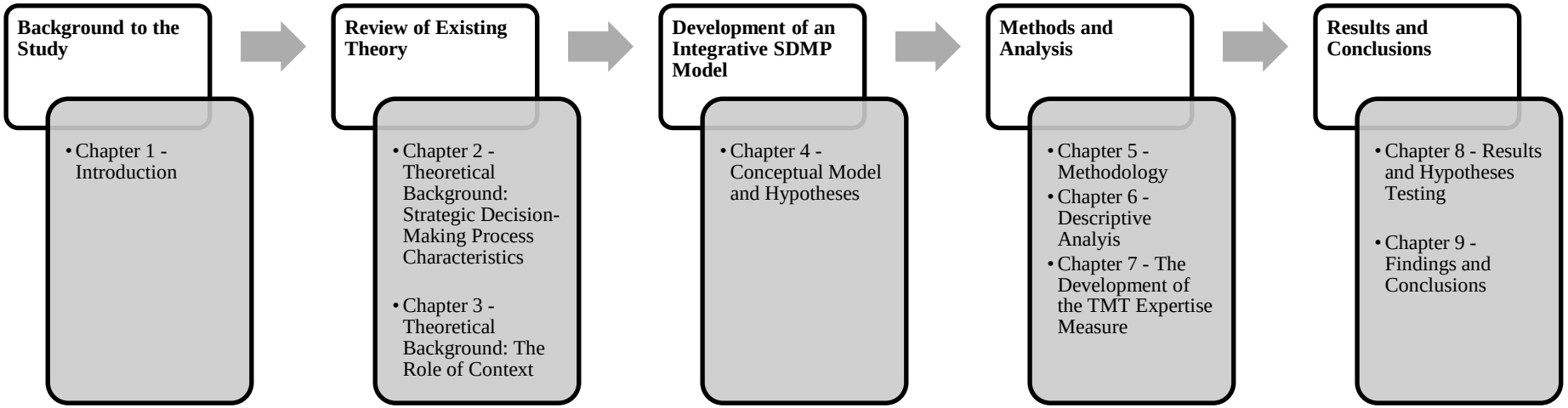
Chapter 6 provides a descriptive analysis of the data gathered in the final quantitative phase of research, gained from 169 main informant and 117 second informant cross-sectional questionnaires. The characteristics of the respondents are initially examined, with tests of differences between early and late responses being presented. Subsequently, the measures utilised to capture the constructs of interest are scrutinised with issues of dimensionality, reliability, and validity being examined through exploratory and confirmatory factor analysis and a number of other statistical tests, including multi-rater agreement, tests for convergent and discriminant validity, and internal consistency. The process described is rigorous and based on recommended and published procedures, in order to allow the subsequent model testing in chapter 8.

Chapter 7 describes the statistical testing process that was employed for developing a valid and reliable measure of TMT expertise. The multi-item scale is analysed, and the psychometric properties explored further. The justification for the process is presented, and the process of measure assessment and purification is discussed. Issues of dimensionality, reliability, and validity are examined and tested within a previously defined and published statistical methodology.

Chapter 8 presents the results from the regression analyses. The first group of hypotheses examine the direct effects of contextual variables on SDMP characteristics, whereas the subsequent group of hypotheses focus on the effects of SDMP characteristics on SDMP outcomes, and the moderating effects of contextual variables. The constructs of interest, having undergone a rigorous statistical examination of their reliability and validity as reported in chapter 6, are tested using multiple moderated hierarchical regression analysis.

Finally, chapter 9 states the substantial and original contribution to SDMP knowledge that this thesis makes and presents a discussion of the findings and conclusions arising from this study. It discusses the extent to which the research questions have been addressed, and summarises the theoretical and practical implications arising from the study. This chapter also outlines the limitations of the study, as well as the important directions for future research.

Figure 1.5 Overview of Thesis



1.6 Summary

This chapter has presented a framework for the present study and the remainder of this thesis. Based on important gaps and calls that have been made in the literature, this chapter has also highlighted the need for conceptual models of the SDMP that integrate multiple SDMP characteristics (procedural rationality, comprehensiveness, behavioural integration, intuition, and political behaviour), multiple contextual variables from each of the four theoretical perspectives (TMT, SD specific characteristics, the external environment, and firm characteristics), and multiple SDMP outcomes (SD quality, implementation success, commitment, and SD speed). The SDMP is a complex phenomenon, and theory development has been hindered by the application of oversimplified models (Elbanna and Child, 2007a). The integrative conceptual model of the SDMP developed and tested in this thesis attempts to address some of these limitations.

This chapter has outlined the centrality of decision-making to management theory and practice, and explored briefly the history of the concepts of strategy and strategic decision-making. Additionally, this chapter has outlined the research objectives and questions that this research sets out to answer. Furthermore, this chapter has explicated the research design followed and explained the structure of this thesis.

CHAPTER 2 – THEORETICAL BACKGROUND: STRATEGIC DECISION-MAKING PROCESS CHARACTERISTICS

2.1 Introduction

This chapter reviews the SDMP literature with respect to five SDMP characteristics[1] (procedural rationality, comprehensiveness, behavioural integration, intuition, and political behaviour) which represent two perspectives of SDM which pervade the literature; the synoptic-formalism perspective and the political incrementalism perspective (Child et al. 2010; Elbanna, 2006; Goll and Rasheed, 1997; 2005). Synoptic formalism is a view that organisations engage in, or at least *should* engage in, deliberate, effortful, analytical, and formal SDMPs (Fredrickson and Mitchell, 1984; Hart, 1992; Hitt and Tyler, 1991). In contrast to the synoptic formal perspective, the political incremental perspective attempts to portray the SDMP in a more realistic light (Eisenhardt and Zbaracki, 1992) by emphasising social and cognitive components of decision-making such as politics and intuition, alongside more formal processes (Papadakis and Barwise, 1997b; Schwenk, 1988).

It should be noted that *incrementalism* (Braybrooke and Lindblom, 1970; Lindblom, 1959; 1979; Mintzberg, 1973) differs from *political* incrementalism and *logical* incrementalism. The incrementalism perspective, according to Lindblom (1959) portrays decision-makers as 'muddling through' and depicts the SDMP as anything but a rational process. According to this perspective decision-makers seldom have explicit goals, consider only decision alternatives that differ little from the status quo, and do not engage in comprehensive analysis and integration of SDs (Fredrickson and Mitchell, 1984). Thus, SDs are fashioned incrementally as opposed to comprehensively (Eisenhardt and Zbaracki, 1992). Quinn's (1980) *logical* incrementalism bridges the opposing perspectives of synoptic formalism and incrementalism by emphasising that decision-makers are often simultaneously rational and intuitive (Papadakis and Barwise, 1997b). According to Quinn (1980) decision makers

[1] A brief overview and justification for the inclusion of these five SDMP characteristics specifically, is presented in sections 2.1.1 and 2.1.2 of this introductory section.

have the intention of acting rationally, yet the actual decision process that unfolds is a combination of intuition and analysis. Political incrementalism, therefore, builds on Quinn's (1980) logical incrementalism by adding political behaviour (Elbanna, 2010), which is excluded from Fredrickson and Mitchell's (1984) depiction of incremental processes (see table 2.1). However, as highlighted by Eisenhardt and Zbaracki (1992) political behaviour, together with intuition, are vital constructs in order for the SDMP to be portrayed in a realistic light. The present study adopts a focus on both political incremental and synoptic formal perspectives. Other perspectives have been discussed in the SDMP literature, including the 'garbage can' model (Eisenhardt and Zbaracki, 1992) which describes decision making in highly ambiguous contexts as organized anarchies (Cohen et al. 1972; Eisenhardt and Zbaracki, 1992). However, given the predominance of synoptic formal and political incremental perspectives in the SDMP literature (Child et al. 2010; Elbanna, 2006; Goll and Rasheed, 1997; 2005), the garbage can model is not adopted in the present study.

Table 2.1 Synoptic Formal and Incremental SDMPs (Adapted from Fredrickson and Mitchell, 1984).

Characteristic	Synoptic-Formal Process Perspective	Incremental Process Perspective
Motive for initiation of SDMP	Continual, pro-active scanning detects opportunity or threat	Response to problem or dissatisfaction with existing state
Conception of goals	SDMP intended to achieve specified goal	Remedial process intended to modify the present state
Relationship between goals and alternatives	Goal(s) identified and alternatives generated independently	Remedial change outcome and means for achieving it are considered simultaneously
Conception of choice	Contingent upon which alternative best contributes to the achievement of the goal	Simultaneously selecting the combination of goals and alternatives that yields the most desired outcome(s)
Analytical comprehensiveness	All factors considered in an exhaustive attempt to identify and select goals and alternatives to achieve those goals	All factors NOT considered, only a few alternatives to the status quo and their consequences are evaluated
Integrative comprehensiveness	Conscious attempt to integrate decisions to ensure they reinforce one another. Thus, strategy is a consciously developed, integrated whole	Little attempt made to integrate decisions. Decisions seen as discreet. Strategy viewed as loosely linked decisions that are each treated differently

The competing perspectives of synoptic formalism and political incrementalism highlight the multi-dimensional nature of the SDMP (Elbanna, 2010). Despite this, the vast majority of existing models do not capture the requisite multi-dimensionality of the SDMP (Elbanna, 2006; Elbanna and Child, 2007a). In order to address the synoptic and incremental debate, empirical research should focus on testing models of the SDMP which combine both perspectives. Some degree of progress has been made (e.g. Dean and Sharfman, 1993b; 1996; Papadakis et al. 1998; Elbanna and Child, 2007a), although much more empirical research is needed (Papadakis et al. 2010) to develop a more thorough understanding of such a complex phenomenon.

2.1.1 Synoptic-Formalism: Procedural Rationality, Comprehensiveness, and Behavioural Integration

Procedural rationality and comprehensiveness occupy a central place in the SDMP literature and have been adopted as representative of the synoptic formal perspective (Fredrickson and Mitchell, 1984; Elbanna, 2006). Thus, the extent to which the SDMP entails the analysis of information and attempts to be exhaustive and integrative symbolises the synoptic formalism perspective. More recently, empirical research has established the veracity of behavioural integration (Carmeli and Schaubroeck, 2006; Lubatkin et al. 2005; Simsek et al. 2005) in explaining interactions between TMT members during the SDMP. Behavioural integration emphasises rational aspects of TMT interactions such as joint decision-making, collaborative behaviour and the open exchange of ideas and information (Hambrick, 1994). Thus, it offers great potential for explaining SDMP outcomes. Therefore in the present study, procedural rationality, comprehensiveness and behavioural integration are operationalised to represent synoptic formalism.

2.1.2 Political Incrementalism: Intuition and Political Behaviour

The SDMP is seldom perfectly rational (Dean and Sharfman, 1993a; 1996). Rather, the process is boundedly rational (Simon, 1955; 1956; March and Simon, 1958; Cyert and March, 1963). That is, decision-makers act as rationally as they can within the confines of their own cognitive limitations, which place restrictions on the amount of information that they are able to process. This necessitates a focus on intuition in order to portray the SDMP in a more realistic light (Eisenhardt and Zbaracki, 1992). Intuition represents an integral part of Quinn's (1980) notion of logical incrementalism. A considerable conceptual literature exists arguing the benefits of intuition in strategic decision-making (e.g. Akinci and Sadler-Smith, 2012; Dane and Pratt, 2007; 2009; Sadler-Smith and Shefy, 2004; Sinclair et al, 2009). However, empirical evidence to support a relationship between the use of intuition in the SDMP, and its effect on SDMP outcomes is lacking (Elbanna, 2006; Elbanna et al. 2012). Despite this, intuition is considered to be a vitally important construct in SDMP research

because it enables decision makers to make rapid, holistic associations and draw together disparate pieces of information non-consciously to provide a clear view of how to proceed with a particular SD (Dane and Pratt, 2007). Intuition, compared to rationality has the advantages of requiring less resources and being fast (Kahneman, 2011); rationality struggles to deal with discrepant information as it is troublesome to determine the weighting of such information (Bingham and Eisenhardt, 2011). Salas et al. (2010, p.966) state that: "The time for a science of intuition in organizations capable of guiding practice and improving effectiveness has come." Therefore, intuition is included in the present study as being representative of the political incremental perspective.

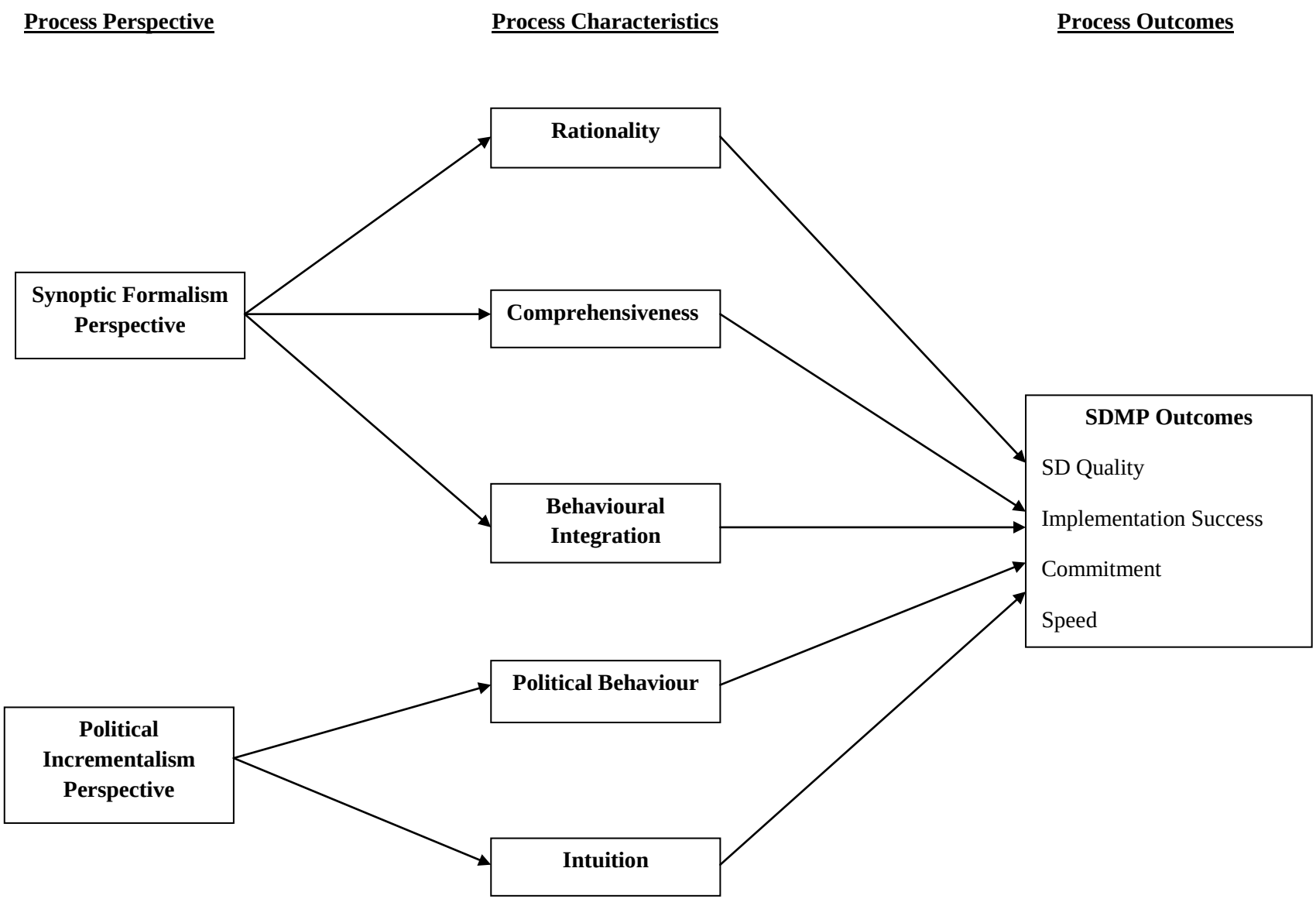
Finally, given that; (i) organisations are inherently political systems, born out of the division of labour; (ii) SDs represent the preferences of the most powerful members of the TMT, and, finally (iii) the SDMP is subject to the influence of TMT members attempting to shape the outcomes to suit their own interests (Eisenhardt and Zbaracki, 1992; Dean and Sharfman, 1996; Hickson et al, 2001), political behaviour is the fifth and final SDMP characteristic in the present study. Political behaviour has been the subject of empirical research (e.g. Bourgeois and Eisenhardt, 1988; Dean and Sharfman 1993b; 1996; Papadakis et al. 1998; Hickson et al. 2001; Elbanna and Child, 2007a) and not only represents the incremental perspective of the SDMP, but a focus on political behaviour also enables a more realistic portrayal of the SDMP. Furthermore, the question as to whether political behaviour can result in positive outcomes remains an important but unanswered empirical research question. In light of these factors, political behaviour is chosen alongside intuition as representative of the political-incremental perspective in the present study.

Therefore the present study combines synoptic formal and political-incremental perspectives in order to explain the outcomes of the SDMP. Procedural rationality, comprehensiveness and behavioural integration represent the synoptic-formal perspective, and intuition and political behaviour represent the political incremental perspective (see figure 2.1). Reconciling the synoptic-formalism and

political incrementalism perspectives has been described as an “imperative matter” for SDMP research (Elbanna, 2010, p.51), because the synoptic versus incremental debate has been much contested but not subjected to adequate empirical scrutiny (Elbanna, 2006). The focus of the present study is on understanding the implications of each perspective for a number of important SDMP outcomes, as well as to develop an understanding of how context influences these five SDMP characteristics.

The remainder of this chapter discusses the five SDMP characteristics of procedural rationality (section 2.2), comprehensiveness (section 2.3), behavioural integration (section 2.4), intuition (section 2.5), and political behaviour (section 2.6). The definition and conceptualisation of each characteristic is discussed first within each section, and subsequently the literature pertaining to each specific SDMP characteristic is reviewed. To enable the development of theory concerning intuition in the SDMP, the social-psychology literature is also briefly reviewed. The major empirical studies examining each of the five SDMP characteristics are presented in five separate tables at the end of each respective section.

Figure 2.1 Strategic Decision-Making Process Perspectives (Adapted from Elbanna, 2010).



2.2 Synoptic Formal SDMP Characteristics: Rationality

This section provides a definition of rationality and explains how it is distinct from definitions and operationalisations of rationality in other related social science fields, such as economics.

Definitions of rationality vary according to the particular field of social science (and indeed across studies even within the SDMP domain of literature); however, what is common across the different fields of social science is the concept of rationality as being behaviour that is logical, systematic, defensible and sensible (Dean and Sharfman, 1993a). Butler (2002, p.226) offers a broad definition of rationality as "the reason for doing something and to judge a behaviour as reasonable is to be able to say that the behaviour is understandable within a given frame of reference." The present study adopts a focus on *procedural* rationality, because as Simon (1978) highlights, domains such as economics have been preoccupied with the *results* of rational choice, as opposed to the *process* of choice. Procedural rationality therefore, is defined as "the extent to which the decision process involves the collection of information relevant to the decision and the reliance upon analysis of this information in making the choice." (Dean and Sharfman, 1993a, p.589).

The origins of the concept of rationality are in the domain of economics, and economists have developed normative models that characterise rationality as a subjective utility maximising process (Bell et al. 1988; Von Neumann and Morgenstern, 1947). Subjective utility maximisation assumes that the decision-maker(s) know all possible decision options as well as the expected value associated with each option and hence select the option with highest expected value. Whilst economists are not concerned with the descriptive veracity of these models (Dean and Sharfman, 1993a), Simon (1955; 1956), March and Simon (1958) and Cyert and March (1963) developed the concept of bounded-rationality, which challenges the assumption that decision-makers in an organisational context formulate decisions based on a subjective utility maximising process. Bounded rationality acknowledges the inherent cognitive limitations of decision makers, which restricts their ability to

collect and analyse all relevant information and identify all possible alternatives (Griffith *et al*. 2012). Thus, according to the bounded-rational model of decision-making, decision-makers 'satisfice' and will commit to a decision option that is *acceptable* as opposed to *optimal* (Eisenhardt et al, 1997).

The heuristics and biases literature (e.g. Einhorn and Hogarth, 1988; Tversky and Kahneman, 1971; 1974; 1983; 1988) which is a sub-domain of social-psychology literature, provides extensive empirical evidence of how individuals systematically violate the assumptions of subjective utility maximisation. Scholars engaged in the heuristics and biases domain of literature adopt experimental laboratory based research designs to analyse cognitive biases, which are cognitive processes that serve as rules of thumb which simplify decisions, thus enabling decision-makers to cut through vast amounts of information (Hodgkinson, 2003). Examples of cognitive biases include prior hypothesis bias, escalation of commitment and reasoning by analogy (Schwenk, 1984). This body of work examining cognitive biases provides a comprehensive body of empirical evidence which challenges the economic subjective utility maximising model of decision making (Dean and Sharfman, 1993a).

Whilst the heuristics and biases domain of literature focus exclusively on individual level decision-making it has cross-pollinated the organisational decision-making literature (e.g. Schwenk, 1984; Das and Teng, 1999; Hodgkinson et al. 1999). Therefore, the conceptualisation and operationalisation of rationality in organisational decision-making differs from the economic subjective utility maximising model because organisational decision-making theorists accept that it is practically impossible in an organisational field setting to determine which of the decision options available maximize the organisation's utility (Dean and Sharfman, 1993a).

The concept of rationality has long been a central concept of interest in the SDMP domain of literature (Elbanna, 2010). However, Eisenhardt and Zbaracki (1992, p.22) suggest that the debate

concerning whether decision-makers act rationally or bounded-rationally when making SDs is "no longer very controversial." There are four broad reasons as to why SDMPs are unlikely to fit a perfectly rational process, in the economic utility maximisation sense of the concept: (i) not all information required will be available and organisations may lack the time and financial resources required to attain it; (ii) because of change inherent in the external environment, rationality may lead to "achieving tomorrow's solution to yesterday's problem" (Braybrooke and Lindblom, 1970, p.121); (iii) individuals are subject to cognitive limitations and are simply incapable of processing unlimited amounts of information, let alone weighing and evaluating such information, and finally; (iv) rational SDMPs may lead to choices which are unpopular amongst certain TMT members and thus upset the political structure of an organisation (Elbanna, 2006).

Thus, whilst SDMPs are unlikely to be rational in the sense of economic utility maximisation, *procedural* rationality (the focus of the present study) in the context of the SDMP "reflects a desire to make the best decision under the circumstances. Such 'intended rationality' is characterized by an attempt to collect the information necessary to form expectations about various alternatives, and the use of this information in the final decision" (Dean and Sharfman, 1993a, p.589).

2.2.1 Rationality in SDM Research

Rationality in SDM has been the focus of considerable empirical research (see table 2.2.1). Indeed, Dean and Sharfman (1993a) argue that much of the strategic management literature is predicated on the concept of rationality, because theories of organisational adaptation are grounded in rational assumptions (Chandler, 1962). Rationality has profound implications not only for strategic management theory but also organisation theory more generally because rationality is based on the assumption that TMTs have considerable discretion over strategic choices (Dean and Sharfman, 1993a; 1996). Thus, if it is the case that TMTs use rational SDMPs to positively influence decision outcomes and to ultimately enable adaptation, this lends support to the theory of strategic choice, and

brings into question the efficacy of the environmental determinism perspective (Dean and Sharfman, 1996).

Despite the importance of rationality for SDMP research, no clear consensus has emerged as to the precise effects of rational SDMPs on decision outcomes (Priem et al. 1995; Goll and Rasheed, 2005; Elbanna, 2006), and empirical evidence concerning the effects of rational SDMPs at the decision level of analysis are limited (Elbanna and Child, 2007a). Theory development in this area has been hindered by the fact that rationality is defined and operationalised in a number of different ways (Papadakis *et al*. 2010), and is often used interchangeably with comprehensiveness and also *operationalised* as comprehensiveness (e.g. Fredrickson 1984; Fredrickson and Mitchell, 1984; Fredrickson and Iaquinto, 1989). To establish empirically whether rationality and comprehensiveness are indeed separate constructs, and to assess how they are each influenced by context and how they each affect SDMP outcomes; in the present study they are each treated as a separate characteristic of the SDMP. Comprehensiveness is defined, discussed, and reviewed in section 2.3 of this chapter. Furthermore, other reasons for inconsistent findings emerging from SDMP studies of rationality include: a lack of systematic treatment of external environmental variables, a failure to include other important characteristics of the SDMP, methodological variation (e.g. data collection, sample size, industries, statistical techniques), and a failure to investigate more complex relationships (i.e. interactions between rationality and contextual variables) which may impact on decision process outcomes (Elbanna, 2006).

In one of the earliest empirical SDMP studies of rationality, Bourgeois and Eisenhardt (1988) found that in high velocity environments, organisations made sense of their environments through analysing information. Bourgeois and Eisenhardt (1988, p.827) describe the SDM of one organisation that they studied as being "classic text book…executives (1) analysed their industry, (2) conducted a competitor analysis, (3) identified the firm's strengths and weaknesses, (4) identified the target

market, and (5) developed the strategy." Bourgeois and Eisenhardt's (1988) data indicates that in high velocity environments, organisations that engage in rational SDMPs perform better than those that satisfice and rely less on analytical approaches. The benefits of rationality are supported by Dean and Sharfman (1996) who established that procedural rationality was positively related to SD effectiveness, although they found no moderating effects of environmental instability, which notwithstanding the differences in the environmental constructs of the two studies, somewhat contradicts the conclusions of Bourgeois and Eisenhardt (1988).

Similar dissensus exists in the studies of Elbanna and Child (2007a) and Goll and Rasheed (1997) and Goll and Rasheed (2005). Elbanna and Child (2007a) found that rationality positively influences SD effectiveness, and that this relationship was strengthened under conditions of environmental hostility. Somewhat contradictory to this, Goll and Rasheed (2005) show a positive relationship between rationality and organisational performance in munificent environments, and Goll and Rasheed (1997) show that the positive effect of rationality on performance is strongest in environments high in *both* dynamism and munificence. Elbanna and Child (2007a) also identified that rationality most strongly influenced SD effectiveness when the SD was uncertain, when the SD was perceived as a crisis, and when past organisational performance was low. These findings highlight the moderating effects of context, however, there is very little of this type of research in the SDMP domain of literature. Finally, Hough and White (2003) provide empirical evidence that rationality is not related to decision quality in dynamic environments (thus contradicting the findings of Goll and Rasheed, 1997), and their empirical evidence suggests that rationality may only be positively related to decision quality in stable environments.

Therefore, whilst it is apparent that rationality in the SDMP can positively influence SDMP outcomes, studies have produced inconsistent and contradictory findings concerning how the external environment affects these relationships. Indeed, on the whole there is a dearth of empirical research

examining how other contextual variables moderate the effects of rationality on SDMP outcomes, despite the potential of such interactions to explain more variance in SDMP outcomes than SDMP characteristics alone (Elbanna and Child, 2007a). Also, Dean and Sharfman (1996) call for research examining implementation and suggest that this is an important SDMP outcome that has been largely overlooked.

A number of empirical studies have examined the contextual influences on rational SDMPs and these are reviewed in detail in chapter 3.

Table 2.2.1. A Summary of Empirical SDMP Research: Rationality

Study	Methodology		Description	Key Findings
	Sample	**Design**		
Miller (1987)	97 small and medium-sized firms	Field study; cross-sectional; structured interviews	Antecedents of outcomes of SDMP	Structural formalization and integration were related to rationality
Miller et al. (1988)	77 firms with 500 or fewer employees	Field-based; cross-sectional	Rationality as a mediator of the effects of context on organisational structure	CEO need for achievement influences rationality. Rationality mediates the effects of context on organisational structure
Bourgeois and Eisenhardt (1988)	Four organisations in the micro-computer industry	Multiple case-study, multi-method	Strategic decision-making in a high velocity environment	Effective firms use rational SDMPs. The more analytic the SDMP, the better the performance of the firm. The clearer and more explicitly articulated the institutional goals, the better the performance of the firm.
Langley (1989)	Three Canadian organisations	Case studies, multi-method	Purposes behind the use of rationality	Four purposes of rationality (formal analysis): (i) information; (ii) communication; (iii) symbolic, and; (iv) control
Dean and Sharfman (1993a)	57 SDs in 24 manufacturing organisations	Field study, cross-sectional, structured interviews	The antecedents of procedural rationality	Competitive threat, external control and decision uncertainty all significantly affect procedural rationality
Dean and Sharfman (1993b)	61 SDs in 24 manufacturing organisations	Field study, cross-sectional, structured interviews	The relationship between procedural rationality and political behaviour in the SDMP	Procedural rationality and political behaviour are independent dimensions of the SDMP
Priem et al. (1995)	101 manufacturing firms	Field study; cross-sectional; mail survey	How the relationship between rationality and performance is moderated by environmental dynamism	A positive relationship between SDMP rationality and firm performance in a dynamic environment, but no relationship between SDMP rationality and firm performance for firms facing stable environments

Study	Methodology		Description	Key Findings
	Sample	Design		
Dean and Sharfman (1996)	52 SDs in 24 manufacturing organisations	Field study, longitudinal, structured interviews	The relationship between procedural rationality and SD effectiveness	Procedural rationality is positively related to SD effectiveness. Environmental instability does not moderate the relationship between procedural rationality and SD effectiveness
Goll and Rasheed (1997)	62 manufacturing organisations	Field study, cross-sectional, mail survey	The moderating effect of the external environment on the relationship between rational SDM and firm performance	Rationality is positively related to firm performance in dynamic environments, and in environments high in munificence
Hough and White (2003)	400 decisions from 54 executive teams	Simulation	The moderating role of environmental dynamism on the relationship between rationality and decision quality	Rational SDMPs have no effect on decision quality in dynamic environments
Goll and Rasheed (2005)	159 manufacturing companies	Field study, cross sectional, mail survey	The relationship between TMT demographics, rational SDMPs, environmental munificence and firm performance	The relationship between rationality and performance was strong and positive in high-munificence environments but negative and not significant in low-munificence environments
Mueller et al. (2007)	42 US manufacturing organisations	Field study, cross-sectional, mail survey	The relationship between formal analysis in SDM and firm performance	Rationality is used for purposes of information, persuasion, communication, control, direction and symbolism. These different forms of rationality influence performance differently.
Elbanna and Child (2007a)	Executives from 169 Egyptian manufacturing companies	Field study, cross-sectional survey, drop-off/pick-up method	The effects of SDMP characteristics on SD effectiveness and the moderating role of SD-specific characteristics, the external environment, and firm characteristics	Rationality is positively related to SD effectiveness. Decision uncertainty, decision motive, environmental hostility and firm performance moderate this relationship
Elbanna and Child (2007b)	As in Elbanna and Child (2007a)	As in Elbanna and Child (2007a)	The influence of SD specific characteristics, the external environment, and firm characteristics on the rationality of SDM	All three theoretical perspectives (SD specific characteristics, the external environment and firm characteristics) significantly affect rationality. The relative importance of environmental variables is less than SD specific characteristics and firm characteristics for explaining variance in the rationality of the SDMP

2.3 Synoptic Formal SDMP Characteristics: Comprehensiveness

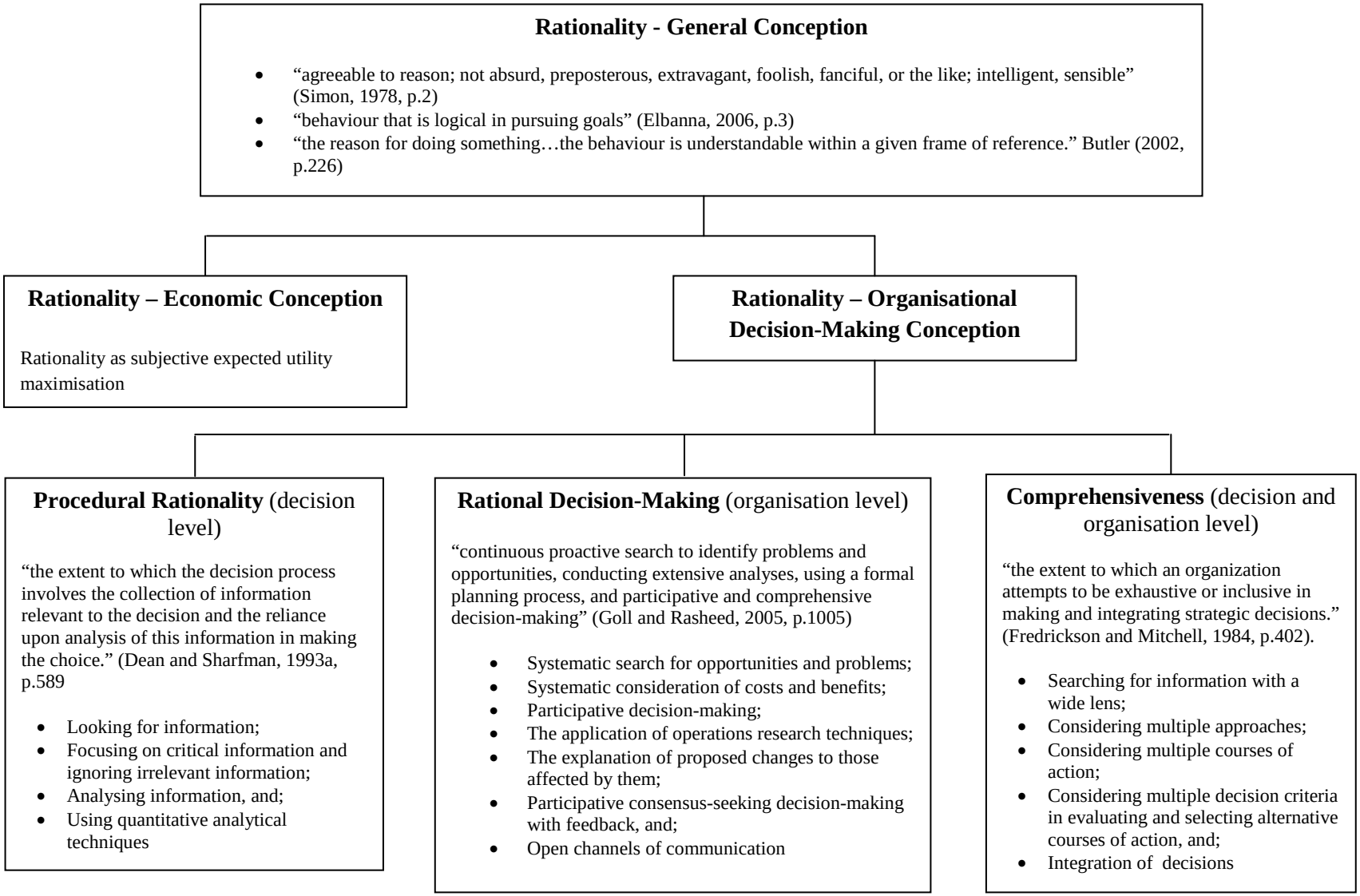
This section provides a definition of comprehensiveness, and a discussion of how it relates to rationality. Section 2.3.1 provides a review of the SDMP literature featuring comprehensiveness. Comprehensiveness in the SDMP is defined as "the extent to which an organization attempts to be exhaustive or inclusive in making and integrating strategic decisions" (Fredrickson and Mitchell, 1984, p.402). Atuahene-Gima and Li (2004, p.584) add that comprehensiveness also encompasses the extent to which the TMT "searches for information with a wide lens and considers multiple approaches, multiple courses of action, and multiple decision criteria in evaluating and selecting alternative courses of action." The definition of comprehensiveness is distinct from procedural rationality, which provides some justification for the conceptualisation and operationalisation of these as two separate constructs in the present study. The Dean and Sharfman (1993a, p.589) definition of procedural rationality ("the extent to which the decision process involves the collection of information relevant to the decision and the reliance upon analysis of this information in making the choice") is much narrower in scope than the definitions of comprehensiveness. Procedural rationality is focused on gathering only relevant information, analysing this information, using quantitative analytic techniques and then basing the final choice on this analysis. Definitions of comprehensiveness on the other hand are broader in scope and describe a process that endeavors to be exhaustive and inclusive in its search for information (as opposed to focusing only on relevant information), and in generating, and evaluating (as well as the criteria used for evaluating) different decision options.

In the SDMP domain of literature comprehensiveness and rationality (including procedural rationality) are used interchangeably (Priem et al. 1995; Goll and Rasheed, 1997; Papadakis et al. 1998; Papadakis and Barwise, 2002; Goll and Rasheed, 2005; Elbanna, 2006) and sometimes combined to form a compound adjective i.e. 'rational-comprehensiveness' (e.g. Priem et al. 1995; Hough and White, 2003; Goll and Rasheed, 2005). Fredrickson and Mitchell (1984, p.401) explain that "the comprehensiveness construct is just one measure of the extent to which an organization's strategy approximates a rational model." Thus, rational choice, which should be conceptualised as an

outcome (Simon, 1978) and defined as “agreeable to reason; not absurd, preposterous, extravagant, foolish, fanciful, or the like; intelligent, sensible” (Simon, 1978, p.2) and “behaviour that is logical in pursuing goals” (Elbanna, 2006, p.3); can be arrived at through either procedural rationality and/or through comprehensiveness. Therefore, procedural rationality and comprehensiveness can be conceptualised as two dimensions of a more global, meta-construct of rationality. Figure 2.3 represents how empirical studies in the SDMP domain of literature have defined and operationalised rationality and comprehensiveness in different ways, and how they relate to other conceptions of rationality.

If it is the case that procedural rationality and comprehensiveness are two discrete and separate constructs, then this could be a reason for the limited and incoherent development of theory amongst studies of rationality and comprehensiveness (Elbanna, 2006). Thus, the differences in prior empirical studies may be attributable to procedural rationality and comprehensiveness being separate constructs which exert different influences on SDMP outcomes, and interact differently with contextual variables. Therefore, because of the conflicting findings in the SDMP literature concerning comprehensiveness and rationality, the present study aims to provide insights into whether statistically they are distinct, and how they each affect SDMP outcomes and are each affected by context.

Figure 2.3 Definitions, Operationalisations, and Relationships of the Rationality and Comprehensiveness Constructs in SDMP Empirical Research



2.3.1 Comprehensiveness in Strategic Decision-Making Research

Similarly to the studies of rationality and procedural rationality, empirical work focusing on comprehensiveness has produced confounding results (see table 2.3.1). This is especially evident in the conflicting findings of Bourgeois and Eisenhardt (1988) and Fredrickson and Mitchell (1984), Fredrickson (1984) and Fredrickson and Iaquinto (1989). Bourgeois and Eisenhardt's (1988) study of four micro-computer firms, found that in a high velocity environment comprehensiveness was positively related to organisational performance. However, the results of Fredrickson and Mitchell's (1984) and Fredrickson's (1984) cross-sectional field-based experiment show the opposite—that in unstable environments comprehensiveness exhibits a negative relationship with organisational performance, whereas in stable environments comprehensiveness has a positive effect on organisational performance. Fredrickson and Iaquinto's (1989) longitudinal extension of the Fredrickson and Mitchell (1984) and Fredrickson (1984) studies, corroborates these earlier findings; demonstrating again that comprehensiveness has a negative association with performance in an unstable environment, and a positive association in a stable environment. Notwithstanding the differences in research design and operationalisation of variables in the Bourgeois and Eisenhardt (1988) and Fredrickson studies, there is an obvious conflict in the findings. Eisenhardt (1989) used 8 case studies, again in the high-velocity microcomputer industry, to demonstrate how organisations that were able to simultaneously consider multiple SD alternatives and integrate SDs with one another and with tactical plans, made speedier SDs which result in superior organisational performance. A major difference in the Eisenhardt and Fredrickson studies is that Fredrickson and colleagues (similarly to many SDMP studies) did not examine SD speed—which has been shown to be a crucial SDMP outcome in certain environments (Judge and Miller, 1991).

Whilst the Bourgeois and Eisenhardt (1988) and Fredrickson studies highlight the significant influence of the external environment on the comprehensiveness-performance relationship, more recently, several empirical studies have shown that the relationship between comprehensiveness and SDMP outcomes is more complex. For instance, Atuahene-Gima and Li (2004) provide empirical

evidence of a nuanced interaction between comprehensiveness and different dimensions of environmental uncertainty. Their findings show that the relationship between comprehensiveness and new product performance was *negatively* moderated by technology uncertainty, but *positively* moderated by demand uncertainty. Also, the effect of comprehensiveness on new product quality was *positively* moderated by demand uncertainty, but unaffected by technology uncertainty. Finally, Miller (2008) again highlights the complex interaction between comprehensiveness and the external environment. Comprehensiveness and performance in a non-turbulent environment were found to be related through an inverted U-shaped function. Also, Miller (2008) found that in a turbulent environment, comprehensiveness positively influences performance, but only at higher levels of comprehensiveness.

Boyd and Reuning-Elliott (1998, p.181) state that "a major criticism of the strategy domain is that researchers spend substantially more effort examining the interrelationships between variables versus the conceptualization and measurement of individual constructs." It may therefore be the case that the confounding results of studies investigating comprehensiveness and rationality are attributable to insufficient attention being paid to the conceptualisation and measurement of these constructs. Certainly, the effects of comprehensiveness and rationality on SDMP outcomes appear to be contingent upon, or at least influenced by, contextual variables (Elbanna and Child, 2007a; Rajagopalan et al. 1993). The lack of clear consensus arising from the extant literature (Elbanna, 2006) emphasises the need not only for further empirical research investigating their direct effects and interactions with contextual variables, but also the clear definition and measurement of comprehensiveness and rationality in order to more precisely discern their effects on SDMP outcomes. The present study endeavors to accomplish this through treating rationality and comprehensiveness as separate and discrete constructs.

A number of empirical studies have examined the contextual influences on comprehensive SDMPs, and these are reviewed in detail in chapter 3.

Table 2.3.1. A Summary of Empirical SDMP Research: Comprehensiveness

Study	Methodology		Description	Key Findings
	Sample	**Design**		
Fredrickson and Mitchell (1984)	109 executives from 27 firms in an unstable environment	Experiment, cross sectional, scenario based interviews	The relationship between comprehensiveness and performance in an unstable industry	Results show a consistently negative relationship between comprehensiveness and performance
Fredrickson (1984)	152 executives from 38 firms in a stable environment	As that of Fredrickson and Mitchell (1984)	The relationship between comprehensiveness and performance in a stable environment	Results show a positive relationship between comprehensiveness and performance
Fredrickson (1985)	321 MBA students and 116 executives	Laboratory study, cross-sectional, scenario-based interviews	The effects of decision motive and organisational performance on comprehensiveness	MBA students' decision processes were affected by the decision motive; but executives' were not. MBA students were more comprehensive when faced with a problem MBA students' decision processes were affected by performance, but the executives' were not. When performance was poor, MBA students were more comprehensive
Bourgeois and Eisenhardt (1988)	Four organisations in the micro-computer industry	Multiple case-study, multi-method	Strategic decision-making in a high velocity environment	In high velocity environments, the more comprehensive the search for strategic alternatives, the better the performance of the firm.
Eisenhardt (1989)	8 microcomputer firms	Multiple case study; longitudinal; multi-method	Making fast strategic decisions in high-velocity environments	The greater the number of alternatives considered simultaneously, the greater the speed of SDM. The greater the integration among SDs, the greater the speed of SDM.
Fredrickson and Iaquinto (1989)	159 executives in stable and unstable environments	Experiment, longitudinal	The relationship between comprehensiveness and performance in stable and unstable environments	Comprehensiveness was positively related to performance in the stable industry and negatively related in the unstable environment. Comprehensiveness demonstrates inertia, and only modest changes occurred to the comprehensiveness of organisations SDMPs over a 4-6 year period

Study	Methodology		Description	Key Findings
	Sample	**Design**		
Jones et al (1992)	70 US firms with significant international operations	Field study, cross-sectional, mail survey	The relationship between comprehensiveness and organisational effectiveness	Consistently positive relationships between analytic and integrative comprehensiveness and organisational effectiveness
Papadakis (1995)	70 strategic decisions from 38 Greek manufacturing firms	Field study, cross-sectional, semi-structured interviews, archival data	The effects of formal planning systems on the characteristics of the SDMP	The degree of comprehensiveness is influenced by formal planning systems
Papadakis (1998)	As that of Papadakis (1995)	As that of Papadakis (1995)	The relationship between organisational performance and the characteristics of the SDMP	Comprehensiveness was significantly and positively influenced by perceptual measures of organisational performance (growth, profitability, and market share) and objective measures (return on assets and profit growth)
Papadakis et al. (1998)	As that of Papadakis (1995)	As that of Papadakis (1995)	The effects of contextual variables on the SDMP	Comprehensiveness is affected by both SD specific characteristics (magnitude of impact and type) and firm characteristics (planning formality, corporate performance, firm size and ownership)
Miller et al. (1998)	106 chief administrators of Texas hospitals, 38 CEOs and 85 TMTs from various industries	Field based; cross-sectional, mail survey	The influence of TMT cognitive style on comprehensiveness	Cognitive diversity has a significant and negative effect on comprehensiveness
Papadakis and Barwise (2002)	As that of Papadakis (1995)	As that of Papadakis (1995)	The influence of the CEO and TMT relative to other contextual variables, on the characteristics of the SDMP	TMT education and competitive aggressiveness significantly and positively influence comprehensiveness, as well as the magnitude of impact of the SD, firm size and ownership type

Study	Methodology		Description	Key Findings
	Sample	**Design**		
Atuahene-Gima and Li (2004)	373 Chinese technology firms	Field study, cross-sectional, survey	The effects of comprehensiveness on new product performance and quality	The relationship between SDMP comprehensiveness and new product performance was negatively moderated by technology uncertainty but positively moderated by demand uncertainty. The effect of SDMP comprehensiveness on new product quality was positively moderated by demand uncertainty but unaffected by technology uncertainty
Miller (2008)	85 US organisations from a variety of industries	Field study, cross-sectional, mail survey	The relationship between comprehensiveness and performance in turbulent and non-turbulent environments	Comprehensiveness influences performance through an inverted U-shaped function in non-turbulent environments. Comprehensiveness has a positive effect on performance in turbulent environments and there may be some minor curvilinearity in this relationship.
Souitaris and Maestro (2010)	129 TMTs from new technology ventures	Field-based; cross-sectional; mail survey	The effects of TMT polychronicity on comprehensiveness	TMT polychronicity has a negative effect on SDMP comprehensiveness.
Slotegraaf and Atuahene-Gima (2011)	208 Chinese technology firms	Field study, cross sectional, mail survey	The effect of comprehensiveness on new product advantage	Comprehensiveness is positively related to new product advantage only at high levels.
Elbanna (2012)	174 public and private organisations in the Arab Middle East	Field study, cross-sectional survey, drop-off/pick-up method	The effect of comprehensiveness on performance	Comprehensiveness is an important predictor of performance.
Meissner and Wulf (2014)	184 top executives of German SMEs	Field study, cross-sectional, mail survey	The antecedents and consequences of comprehensiveness	Decision quality mediates the effects of comprehensiveness on performance, and perceived environmental uncertainty directly and positively influences comprehensiveness.

Table 2.3.2 A Comparison of Definitions and Operationalisations of Rationality and Comprehensiveness in Empirical SDMP Research.

Study	Construct	Definition	Level of Analysis	Operationalisation
Fredrickson and Mitchell (1984), Fredrickson (1984), Fredrickson (1985), Fredrickson and Iaquinto (1989), Iaquinto and Fredrickson (1997)	Comprehensiveness	The extent to which an organization attempts to be exhaustive or inclusive in making and integrating strategic decisions	Organisation	Four stages of the SDMP (situation diagnosis, alternatives generation, alternatives evaluation, and decision integration). For each stage, comprehensiveness is assessed on a number of different elements, including: assignment of primary responsibility, breadth of participation, willingness to go outside the organisation for information, primary method used, amount of direct out-of-pocket expenses incurred, range of techniques used
Miller (1987); Miller *et al*. (1988)	Rationality	Systematic effort and thoroughness devoted to uncovering and assessing problems and opportunities	Organisation	Analysis, planning, systematic scanning of environment and explicitness of strategy
Bourgeois and Eisenhardt (1988)	Rationality	A thorough analytic process	Organisation	Information gathering; computational analysis; identifying goals.
Bourgeois and Eisenhardt (1988) Eisenhardt (1989)	Comprehensiveness	Being exhaustive in the generation and evaluation of alternatives	Organisation	Multiple alternatives, integration of SDs with one another and with tactical plans (as opposed to treating SDs as discrete and disconnected events)

Study	Construct	Definition	Level of Analysis	Operationalisation
Langley (1989)	Rationality	Formal analysis	Organisation	Written documents reporting the results of some systematic study of a specific issue
Jones et al (1992)	Comprehensiveness	Being systematic and through in developing and integrating decisions to relate the organisation to its external environment	Organisation	Analytic comprehensiveness and integrative comprehensiveness
Dean and Sharfman (1993a;1993b; 1996)	Procedural rationality	Extent to which the decision process involves the collection of information relevant to the decision, and the reliance upon analysis of this information in making the choice	Decision	How extensively the group looked for information; how extensively the group analysed information; how important quantitative analytic techniques were in making the decision; whether the process was mostly analytical or mostly intuitive, and; how effective the group was at focusing on crucial information and ignoring irrelevant information
Priem *et al*. (1995)	Rational-comprehensiveness	No formal definition stated	Organisation	Scanning, analysis and planning
Goll and Rasheed (1997; 2005)	Rationality	No formal definition stated	Organisation	Extent to which the company emphasises: (1) a systematic search for opportunities and problems, and a systematic consideration of costs and benefits; (2) the strategic and long-term importance of participative decision-making at management levels; (3) the application of operations research techniques; (4) the explanation of proposed changes to those affected by them; (5) participative consensus-seeking decision-making with feedback; and (6) open channels of communication
Papadakis (1995), (1998), Papadakis et al. (1998), Papadakis and Barwise (2002)	Comprehensiveness	The extent to which an organization attempts to be exhaustive or inclusive in making and integrating strategic decisions	Decision	Five stages of the SDMP (situation diagnosis, alternatives generation, alternatives evaluation, making of the final decision, and decision integration). For each stage, comprehensiveness is assessed on 8 different elements: extent of scheduled meetings, assignment of responsibility, information-seeking activities, systematic use of external sources, employees involved, use of specialised consultants, years of historical data review, and functional expertise of people involved.

Study	Construct	Definition	Level of Analysis	Operationalisation
Miller et al. (1998)	Comprehensiveness	Extent to which the TMT utilise an extensive decision process when dealing with an immediate opportunity or threat	Organisation	Two measures used. One assesses comprehensiveness in situation diagnosis, generating alternatives, and selecting an alternative The second measure examines comprehensiveness in developing alternatives, considering diverse criteria for eliminating possible courses of action, thoroughly examining multiple explanations for problems and opportunities, examining suggested courses of action, and searching for possible responses
Simmons et al. (1999)	Comprehensiveness	Exhaustiveness and inclusiveness in making and integrating SDs	Organisation	Weighing multiple approaches, examining the pros and cons of several alternatives and using multiple criteria for eliminating courses of action
Hough and White (2003)	Procedural rationality	The use of information for the purpose of selecting a sensible alternative in the pursuit of one's goals	Decision	Availability (degree to which available cues were known to the team) and pervasiveness of information (the extent to which all team members were informed of the available information)
Atuahene-Gima and Li (2004)	Comprehensiveness	Extent to which the project team searches for information with a wide lens and considers multiple approaches, multiple courses of action, and multiple decision criteria in evaluating and selecting alternative courses of action	Decision	Developing alternative courses of action, considering many different criteria, examining multiple explanations for problems faced and opportunities available, examining suggested courses of action, and searching for alternative courses of action
Elbanna and Child (2007a; 2007b)	Procedural rationality	The reason for doing something and to judge a behaviour as reasonable is to be able to say that the behaviour is understandable within a given frame of reference (Butler, 2002, p.226)	Decision	How extensively decision-makers: (1) gathered relevant information; (2) analysed relevant information; (3) used analytic techniques, and; (4) focused attention on crucial information
Miller (2008)	Comprehensiveness	Extent to which the TMT utilise an extensive decision process when dealing with an immediate	Organisation	Comprehensiveness in situation diagnosis, generating alternatives, and selecting an alternative

		opportunity or threat		
Study	**Construct**	**Definition**	**Level of Analysis**	**Operationalisation**
Souitaris and Maestro (2010)	Comprehensiveness	Extent to which executives systematically gather and process information from the external environment in making strategic decision	Organisation	Comprehensiveness in developing alternatives, considering diverse criteria for eliminating possible courses of action, thoroughly examining multiple explanations for problems and opportunities, examining suggested courses of action, and searching for possible responses
Slotegraaf and Atuahene-Gima (2011)	Comprehensiveness	Degree to which the team is exhaustive as it considers multiple approaches, courses of action, and decision criteria in its strategic decision making	Decision	Developing many alternative courses of action, using multiple criteria for eliminating possible courses of action, engaging in extensive and in-depth analysis of all available strategic options, and thoroughly examining explanations for problems or opportunities

2.4 Synoptic Formal SDMP Characteristics: Behavioural Integration

This section provides a definition of behavioural integration and an overview of the concept, and section 2.4.1 provides a review of the empirical behavioural integration literature.

Behavioural integration is the extent to which decision makers engage in "mutual and collective interaction" (Hambrick, 1994, p.188). Behavioural integration is a vitally important concept in SDMP research because it has been argued that it reflects a level of dynamism and complexity in strategic decision making that cannot be adequately captured by any of the existing single process dimensions (Simsek et al. 2005). Behavioural integration therefore complements rationality and comprehensiveness—which focus on information processing—by including social components of the SDMP. Hambrick's (1994) concept of behavioural integration comprises:

1. Quantity and quality of information exchange; referring to the richness, timeliness, and accuracy of information;

2. Collaborative behaviour, referring to the group's social cohesion, and;

3. Joint decision-making, which refers to the quality and intensity of the group's interactions.

Therefore, behavioural integration parsimoniously captures aspects of group processes that were previously represented by a number of separate constructs, such as social integration (e.g. harmonious relationships, group cohesion); frequency and quality of group member exchange; and collaboration between members (Carmeli and Schaubroeck, 2006). As such, behavioural integration is of particular saliency to SDMP researchers, because according to Lubatkin et al. (2006) and Carmeli and Schaubroeck (2006), behavioural integrated TMTs:

1. Foster a diverse and deep understanding, and use of, the teams' knowledge base;

2. Synthesise alternative points of view which will result in feedback and the correction of errors;

3. Encourage social mechanisms such as reciprocity and trust, thus encouraging team members to share their tacit knowledge, and;

4. Suppress task conflict, because trust within the TMT will be high.

Therefore, when making SDs, behaviorally integrated TMTs will address and debate information, resulting in a thorough assessment of the situation, precise definitions of problems, and a broad conceptualisation of alternative solutions. Thus, it is likely that behaviorally orientated TMTs will not only make higher quality SDs, but will also be more committed to the decision because of how it was collectively derived (Carmeli and Schaubroeck, 2006).

2.4.1 Behavioural Integration Empirical Research

Despite nearly 20 years passing since Hambrick's seminal (1994) article which first introduced the concept of behavioural integration, there is a dearth of empirical research. Furthermore, behavioural integration has been entirely neglected by SDMP researchers, largely because the TMT and SDMP literatures have evolved independently of one another (Goll and Rasheed, 2005). The results of the handful of empirical studies examining behavioural integration are presented in table 2.4.1.

In one of the first empirical studies of behavioural integration, Simsek et al. (2005) developed a valid and reliable 9 item measure of behavioural integration. Simsek et al. (2005) also examined the CEO, TMT and firm level antecedents of behavioural integration. Whilst the influence of contextual variables are discussed in detail in chapter 3, a brief overview of Simsek et al's (2005) findings are detailed here. CEO collectivist orientation (tendency to act in the interests of the group rather than the individual) and tenure were both found to be significantly and positively related to behavioural

integration. Whilst firm performance was also found to be positively related to behavioural integration, TMT goal preference diversity, and educational diversity together with firm size were found to be negatively related to behavioural integration.

In one of only two empirical studies examining the effects of behavioural integration, Lubatkin et al. (2006) found that behavioural integration was positively associated with ambidextrous orientation, which refers to an organisation's ability to simultaneously exploit existing competencies whilst exploring new opportunities. Hence organisation's that are able to unify their TMTs and synchronise social and task processes are able to process the disparate demands of exploitation and exploration (Lubatkin et al. 2006). Finally, Carmeli and Schaubroeck (2006), using an organisational level of analysis, found that behavioural integration was negatively related to organisational decline, both directly and indirectly, through the quality of decision-making.

Despite the relative paucity of research examining behavioural integration it has great potential to provide invaluable insights in the SDMP literature and complement existing SDMP characteristics such as rationality and comprehensiveness. This is because these constructs focus solely on information analysis and evaluation, and neglect the social processes and interactions that occur between decision-makers. A focus on these complex behavioural aspects of SDM has the potential to explain a range of SDMP outcomes, such as overall decision quality but also commitment, implementation success and decision speed. Furthermore, if it is the case that behavioural integration results in high quality SDs, a further important area of focus will be to understand the contextual antecedents of behavioural integration in the SDMP.

Table 2.4.1 A Summary of Empirical Research: Behavioural Integration

Study	Methodology		Description	Key Findings
	Sample	**Design**		
Simsek et al. (2005)	402 small organisations	Field study, cross sectional, mail survey	Development of a behavioural integration measure and modelling of the antecedents of behavioural integration	The following variables are significantly and positively associated with behavioural integration: CEO collectivist orientation, CEO tenure, firm performance. The following variables are significantly and negatively associated with behavioural integration: TMT goal preference diversity, TMT educational diversity and firm size.
Carmeli and Schaubroeck (2006)	116 Israeli organisations	Field study, cross sectional, mail survey	The implications of behavioural integration for organisational decline	Behavioural integration was negatively related to organisational decline both directly and indirectly
Lubatkin et al. (2006)	139 small and medium organisations	Field study, longitudinal, mail survey	Influence of behavioural integration on organisational ambidextrous orientation and the implications for firm performance	Behavioural integration is significantly and positively related to organisational ambidexterity.

2.5 Political Incremental SDMP Characteristics: Intuition

This section provides a definition of intuition and an overview of the concept. Section 2.5.1 reviews the SDMP literature featuring intuition and section 2.5.2 reviews the social-psychology literature featuring intuition in order to provide insights to help develop theory concerning this fundamentally important construct (Hodgkinson et al. 2008) in the SDMP domain of literature.

The present study adopts Simon's (1992, p.155) definition of intuition: "the situation has provided a cue: This cue has given the expert access to information stored in the memory, and the information provides the answer. Intuition is nothing more and nothing less than recognition." Furthermore, intuition is "accompanied by a feeling of confidence or certitude, and is affectively charged" (Sinclair et al, 2009, p.393). In everyday parlance, intuition is understood to be a 'gut feeling' or a 'hunch' based on a broad constellation of prior experiences and past learning (Sinclair et al. 2009; Woiceshyn, 2009). To some degree, the notion of 'gut-feel' is credible, as research suggests that decision-makers recognise when a certain combination of decision cues do, or do not, 'feel right' but are often unable to articulate why (Sinclair et al. 2009). However, a confusing aspect of past research is the tendency to call both intuitive processes and their outcomes 'intuition' (Dane and Pratt, 2007). Intuition has been used in three different ways: (1) as a verb e.g. 'to intuit' or 'intuiting'; (2) as an adjective to characterise a process e.g. 'an intuitive process', and; (3) as a noun, to describe the outcome of a process e.g. 'an intuition'. In the present study intuition is used as an adjective to characterise the SDMP, which is consistent with its prior treatment in this domain of literature (e.g. Khatri and Ng, 2000; Elbanna and Child, 2007a; Dayan and Elbanna, 2011; Elbanna et al. 2012).

There has been a tendency to conflate intuition with related concepts such as insight and instinct in the literature (Sadler-Smith and Shefy, 2004). Table 2.5 delineates intuition from its related concepts and shows how it is a distinct concept in itself, and there is a growing consensus that intuition: (i) comprises a capacity for obtaining understanding without rational, deliberate or effortful thought; (ii)

it is neither the opposite of rationality nor is it a random act such as guessing. Rather, intuition produces conclusions and choices from a non-conscious mental process, and; (iii) arises from rapid, non-conscious and holistic associations (Hodgkinson et al. 2009).

Table 2.5 Delineating Intuition from Related Concepts

Concept	Definition and Delineation
Cognitive Style	Cognitive style describes a decision maker's propensity to use intuition, or rationality during decision-making. Cognitive style is "individual differences in preferred ways of organizing and processing information and experience; an individual difference in how people perceive, think, solve problems, learn, and relate to each other" (ogilvie and Hough, 2011, p.125). Cognitive style has been conceptualised in terms of a dual processing system (Pacini and Epstein, 1999). This conceptualisation posits that individuals have a preference for either an experiential (intuitive) or rational (analytic) information processing style.
Insight	Insights are "sudden unexpected thoughts that solve problems" (Hogarth, 2001, p.251). However, insight differs from intuition in that it involves an incubation period which is preceded by a lengthy deliberate, analytical process (Dane and Pratt, 2007; Hogarth, 2001; Shirley and Langan-Fox, 1996). A further distinction that has been made is that insight is a conscious process of becoming aware of the connections supporting a particular decision, whereas intuition reaches judgments subconsciously (Lieberman, 2000; Sternberg and Davidson, 1995).
Instinct	Instincts are innate biological capabilities and automatic reflexes to stimuli, such as shutting one's eyes when exposed to bright light (Epstein, 2002; Hogarth, 2001). Instinct enables individuals to "respond to stimuli in ways that maximize our chances of survival in the face of a physical threat" (Sadler-Smith and Shefy, 2004, p. 81). Intuition is experiential and learnt, which contrasts the innate nature of instinct.
Guessing	Guessing is similar to intuition only in terms of its speed. Guessing does not entail affectively charged judgments or any kind of non-conscious information processing, nor does it have the characteristic of certitude associated with intuitive decisions (Dane and Pratt, 2007).

Intuition has been described as a vital construct in order to portray the SDMP in a more realistic light (Eisenhardt and Zbaracki, 1992). Indeed recently, "there has been a surge of interest in intuition as a scientific topic" (Hogarth, 2010, p.338). This is because the SDMP takes place in an external environment characterised by increasingly fierce competition, shortening product life-cycles, rapid technological innovation and economic turbulence (Nadkarni and Herrmann, 2010). This has resulted in a surfeit of information that decision-makers must collect, process, evaluate and act upon; often

under enormous time pressure. It is therefore often the case that decision-makers' information processing capacities are frequently exceeded, and thus, they can only act rationally within the bounds of their own cognitive limitations (Hodgkinson et al. 2009). Furthermore, SDs are complex and judgmental; requiring decision-makers to synthesise vast swathes of 'soft' information into new perspectives, which requires a blend of analytics and intuition (Sinclair et al. 2009).

Historically the field of strategic management has been preoccupied with the development of rational and analytical theories and models (e.g. Ansoff, 1965; Hofer and Schendel, 1978; Porter, 1980). Such theory development has largely focused on the structures of the firm and its fit with the external environment (e.g. Miles and Snow, 1978). However, more recently scholars have begun to incorporate the insights from social psychology and examine the cognitive and behavioural processes that underpin organisational learning, adaptation and performance (Hodgkinson and Healey, 2011). Intuition is particularly important because it speeds up the SDMP (Wally and Baum, 1994), and the speed of the SDMP is critical in certain environments (Eisenhardt, 1989) and due to information being limited or unavailable, intuitive SDMPs using soft information may produce effective SDs (Mintzberg, 1994a; 1994b). This is because instead of spending time searching for information that may not exist, is inaccurate, or becomes obsolete rapidly; decision-makers with expertise are instead able to use their intuition, which operates subconsciously and functions by quickly scanning for cues and then matching these cues with previous experiences, in order to arrive at a decision (Quinn, 1980; Wally and Baum, 1997).

Whilst there has been a recent surge of interest in intuition (Hogarth, 2010), it has long been a topic of interest to management scholars (Isenberg, 1984; Simon, 1987; Prietula and Simon, 1989; Agor, 1990). These early works were focused on describing expert intuition, which is predicated on the basis of 'pattern matching' which posits that intuition functions by matching cues to chunks of

information stored in the decision maker's memory. These early woks often cite studies of grandmaster chess players. For example, Simon (1987, p.60) explains how:

"The grandmaster's memory holds more than a set of patterns. Associated with each pattern in his or her memory is information about the significance of that pattern – what dangers it holds, and what offensive or defensive moves it suggests. Recognizing the pattern brings to the grandmaster's mind at once moves that may be appropriate to the situation. It is this recognition that enables the professional to play very strong chess at a rapid rate."

In terms of SDM, pattern matching is a particularly salient concept, as Sadler-Smith and Shefy (2004, p.83) highlight: "instead of rigorously exploring all available options, the experienced executive's cognitive system becomes programmed to look for cues that relate to previously experienced patterns." Simon (1987, p.63) succinctly captures the essence of intuition as "analyses frozen into habit."

It is also important to note that there has been some debate in the literature as to whether intuition should be conceptualised as existing on a continuum (Allinson and Hayes, 1996; Hayes and Allinson, 1994), with rationality at the other extreme; or whether intuition and rationality are two independent and separate cognitive processes (Chaston and Sadler-Smith, 2012; Epstein et al. 1996; Sadler-Smith, 2004; Scott and Bruce, 1995). Recently, the theoretical and psychometric validity of cognitive continuum theories and measures have been questioned (Hodgkinson and Sadler-Smith, 2003a, 2003b). However, contributing to this debate is beyond the scope of the present study. Intuition and rationality are modeled as two separate and independent characteristics of the SDMP, which is consistent with prior studies in the SDMP domain of literature (e.g. Sadler-Smith, 2004; Elbanna and

Child, 2007a; Elbanna, 2010; Elbanna et al. 2012) and also with contemporary dual process theories of cognitive style (Epstein et al. 2006; Hodgkinson and Sadler-Smith, 2003a, 2003b).

There has been a tendency to treat intuition as a mystical ability that some executives are endowed with, which has led to a skeptical view of the subject as a serious academic topic (Hodgkinson et al. 2008). However, contemporary cognitive process theory has demonstrated that intuition is underpinned by a unique biological basis (Lieberman, 2007; Hodgkinson et al. 2009; Chassy and Gobet, 2011). Whilst an examination of the biological processes of intuitive decision-making processes is far beyond the scope of the present study, functional magnetic resonance imaging (FMRI) has been utilised e.g. (Lieberman et al. 2004) to demonstrate that intuition is a real phenomenon, and that intuitive processes engage distinctly different regions of the brain than compared to rational processes (Chassy and Gobet, 2011; Hodgkinson et al. 2009; Lieberman, 2000). Given the evidence that intuition is a real phenomenon, underpinned by a unique biological system, combined with the significant theory development clarifying the concept (e.g. Dane and Pratt, 2007; Hodgkinson et al. 2008; Salas et al. 2010); intuition should be treated as an important and credible academic subject matter.

2.5.1 Intuition in Strategic Decision-Making Research

Despite intuition being a vital construct in SDMP research (Eisenhardt and Zbaracki, 1992), a long-standing interest in the topic (e.g. Isenberg, 1984; Simon 1987) and widespread acknowledgement that executives rely on intuition as a part of all decisions (Khatri and Ng, 2000; Sadler-Smith and Shefy, 2004); there is very little in the way of applied empirical research (Elbanna et al. 2012) and those studies that do exist are contradictory. The remainder of section 2.5.1 reviews the SDMP literature that has featured intuition, and in section 2.5.2 the social-psychology literature is reviewed so as to generate insights in order to develop theory concerning intuition in the SDMP.

One of the first SDM studies to consider intuition was Eisenhardt's (1989) inductive study of 8 organisations in the high velocity micro-computer industry. Eisenhardt (1989, p.570) states that "executives making fast decisions accelerate their cognitive processing…a deep personal knowledge of the enterprise that allows them to access and interpret information rapidly when major decision arise." These accelerated cognitive processes facilitate rapid decision-making, which in turn leads to superior performance in high velocity environments (Eisenhardt, 1989). Eisenhardt (1989) also proposed that successful firms use a combination of intuition and comprehensiveness to achieve superior performance. Wally and Baum (1994) also report a positive relationship between executive use of intuition and the pace of SDM.

Khatri and Ng (2000, p.59) studied intuitive synthesis, defined as "a synthetic psychological function in that it apprehends the totality of a situation." The study provided empirical evidence of a positive relationship between intuitive synthesis and organisational performance in an unstable environment, and a negative relationship in a stable environment. Khatri and Ng (2000) found that intuitive synthesis had a highly significant and positive relationship with financial performance amongst computer companies (assumed to be an unstable industry), but an insignificant relationship with non-financial performance. Amongst firms in the utilities industry (assumed to be a stable industry) intuitive synthesis had a significant and negative relationship with financial and non-financial performance. In the banking industry (a moderately unstable industry at the time of the study), intuitive synthesis was negatively associated with financial performance but had no significant relationship with non-financial performance. Finally, Khatri and Ng (2000) also measured respondents' perceptions of the instability of their industry, and examined the relationships between intuitive synthesis and performance across high and low perceived environmental instability groups. Intuitive synthesis had a negative and significant relationship with non-financial performance and non-significant relationship with financial performance for companies in the low perceived environmental instability group. In the high perceived environmental instability group intuitive synthesis showed no significant relationship with financial or non-financial performance. Taken as a

whole, Khatri and Ng's (2000) results show moderate support for the notion that intuition positively effects performance in unstable environments, but exerts negative effects in more stable environments.

Somewhat contrary to Khatri and Ng's (2000) findings, Elbanna et al. (2012) found that intuition was significantly related to decision disturbance. The authors defined intuition as "a mental process based on a 'gut feeling' as opposed to explicit, systematic analysis, which yields an intuitive insight or judgment that is used as a basis for decision-making" (Elbanna et al. 2012, p.2). Elbanna et al. (2012) found intuition resulted in SDs with negative, unintended consequences. Furthermore, the effects of intuition on decision disturbance were found to be moderated by environmental hostility, such that in hostile environments, the effects of intuition on decision disturbance are greater. The study also examined the contextual antecedents of intuition; however, these are discussed within chapter 3, which reviews the effects of contextual variables on SDMP characteristics.

In an earlier study, Elbanna and Child (2007a) found a negative but non-significant effect of intuition on SD effectiveness (the extent to which a SD achieves its objectives and avoids negative unintended consequences). The authors also modeled rationality and political behaviour alongside intuition as SDMP characteristics. However, when intuition was regressed onto SD effectiveness alone it had a significant and negative effect on SD effectiveness. Elbanna and Child (2007a) also found that organisational performance (using a perceptual measure) moderated the effects of intuition on SD effectiveness, such that the negative effects were weaker for companies with high performance.

Other studies have examined the consequences of intuition for new product development outcomes. Dayan and Di Benedetto (2011) found an inverted U-shaped relationship between intuition and new product creativity for teams with high experience and low stress. Furthermore, Dayan and Elbanna

(2011) found that intuition is also positively related to product success and speed to market. Furthermore, these relationships were moderated by environmental turbulence, such that the impact of intuition on product success and speed to market was greatest under conditions of environmental turbulence.

Finally, Bingham and Eisenhardt's (2011) inductive study of six technology based ventures found that intuitive SDMPs were used in the internationalisation process. The authors found that simple decision rules were learnt and then used by executives, in the form of intuitive processes, in subsequent decisions to enter new international markets.

Other authors have focused on the cognitive style of decision-makers, defined as individual differences in "how people perceive, think, solve problems, learn, and relate to each other" (Hough and ogilvie 2005, p.421). Dual process theories of cognitive style (Epstein et al. 1996) posit that humans have two modes of processing information; a system 1 and system 2. System 1 cognitive processes are analogous to intuition and are automatic, subconscious, involve emotions and feelings and synthesize information holistically (Epstein et al. 1996). System 2 (also referred to as the rational system) by contrast, is conscious, analytic, intentional, and free of emotion (Epstein et al, 1996). System 1 and system 2 are in fact complementary and one mode can override the other in order to correct a decision (Kahneman, 2003). The degree of dominance of one system is contingent upon individual preferences, the characteristics of the task, the degree of emotional involvement, and the experience of the decision maker (Epstein et al, 1996).

Sadler-Smith (2004) and Chaston and Sadler-Smith (2012) examined the effects of intuitive (system 1) cognitive style on organisational performance and on firm entrepreneurial orientation. Sadler-Smith (2004), in a sample of UK SMEs found that the intuitive cognitive style of owner-managers

was positively related to financial and non-financial performance, although environmental instability did not moderate this relationship. However, Chaston and Sadler-Smith (2012), examining the effects of owner-manager intuitive cognitive style on entrepreneurial orientation (innovation, risk-taking and pro-activity), found no significant relationship. It should be noted that studies utilising cognitive style as a proxy for actual decision process are problematic. This is because these studies omit actual mediating decision process, and simply because a decision-maker has an intuitive (or rational) cognitive style, it doesn't necessarily follow that the actual SDMP will be intuitive (or rational); other contextual variables may have a more significant effect in determining the decision process (Bakken and Haerem 2010). Secondly, such studies conflate levels of analysis; cognitive style is an individual level variable; whilst entrepreneurial orientation and organisational performance are organisational level constructs.

Taken as a whole, the studies of intuition (as a decision process, not cognitive style) in the SDMP domain show conflicting findings. The only real area of consensus concerns the effects of intuition as being positively related to decision speed (Eisenhardt, 1989; Wally and Baum, 1994; Dayan and Elbanna, 2011). Intuition has been found to be positively related to organisational performance in unstable environments and negatively related in stable environments (although these relationships differ according to the measure of environmental instability used). Intuition has also been found to result in negative decision outcomes (Elbanna and Child, 2007a; Elbanna et al. 2012) but also positively influence new product outcomes (Dayan and Di Benedetto, 2011; Dayan and Elbanna, 2011). In order to reconcile some of these confounding findings, a review of the social-psychology literature was considered essential in order to incorporate contemporary insights to assist with theory development in this vital area. The following sections provide a brief overview of intuition in the social psychology domain of literature.

2.5.2 Intuition in Social-Psychology Research

It is doubtful that research into how TMTs make SDs "can progress far without greater attention to relevant literature in fields, especially psychology and social psychology" (Hambrick and Mason, 1984, p.203). Hence in order to generate insights to help to reconcile the confounding findings of existing empirical studies and to develop theory concerning intuition in the SDMP, this section reviews studies of intuition from the social-psychology literature. Two perspectives pervade the social-psychology literature on intuition; (i) the naturalistic decision-making perspective and (ii) the heuristics and biases perspective (Kahneman and Klein, 2009). Whilst theory from the heuristic and biases literature has been utilised in the organisational decision (and SDM) literatures (Schwenk, 1984; Das and Teng, 1999; Hodgkinson et al. 1999), Naturalistic Decision-Making has not, despite its great potential (Lipshitz et al. 2006). The importance of these two perspectives to SDM is apparent in the 2010 McKinsey Quarterly article where Kahneman (a chief proponent of the heuristics and biases perspective) and Klein (a proponent of the Naturalistic Decision-Making perspective) discuss the implications of their varying perspectives for SDM. The diversity of their opinions is highlighted in the following two quotes:

"Many business intuitions and expertise are going to be telling you something valuable; they are telling you something useful, and you want to take advantage of them" (Kahneman and Klein, 2010, p.4).

"In strategic decisions I'd be really concerned about overconfidence. There are often entire aspects of the problem that you can't see – for example, am I ignoring what competitors might do?...I'd add that the amount of success it takes for leaders to become overconfident isn't terribly large. Some achieve a reputation for great successes when in fact all they have done is take chances that reasonable people wouldn't" (Kahneman and Klein, 2010, p.5)

Naturalistic Decision-Making researchers are concerned with examining how expert decision-makers make high-stakes decisions in complex and dynamic real-life settings (Lipshitz et al, 2001). As such, Naturalistic Decision-Making focuses on expert-intuition, and uses predominantly qualitative techniques such as critical incident technique and cognitive task analysis to systematically explain decision processes of professionals in high stakes, time-pressured contexts, such as hospital accident and emergency departments, aviation, combat, and fire-fighting. Naturalistic Decision-Making is unique in social-psychology in that it focuses on field-based decision-making as opposed to using laboratory based methods. In general, Naturalistic Decision-Making researchers adopt a positive view of intuition, and recognise its vital role in high-stakes, pressured environments.

Naturalistic Decision-Making is defined as "the ways in which people use their experience to make decisions in field settings" (Sinclair et al. 2009), and this perspective posits that expert decision-makers are able to make rapid decisions utilising pattern matching which draws upon their expertise. Expert decision-makers' knowledge is 'pattern-indexed', and enables them to instantly retrieve the requisite knowledge in order to immediately apprehend how to solve a problem under specific circumstances (Drillings and Serfaty, 1997). Thus, the concept of expertise is central to Naturalistic Decision-Making as not only does it determine the effectiveness of intuitive, rapid, non-conscious decision processes, but it also determines whether an intuitive or rational process will be followed, because experts recognise when to use intuition and when to use rationality (Louis and Sutton, 1991).

According to Klein (2011), expertise comprises both explicit knowledge (knowledge of facts and rules) and tacit knowledge (perceptual abilities, recognition of patterns, judgments). Furthermore, experts are able to switch readily between either mode of cognitive process (Dreyfus and Dreyfus, 1986). Naturalistic Decision-Making researchers have developed the recognition primed model of decision-making which describes how experts use their repertoires of patterns to make decisions (Klein et al, 1986). The recognition primed model shows how fire-fighters draw upon their expertise

to formulate a course of action without any need to engage in lengthy, deliberate analyses (Sinclair et al. 2009). Thus, intuition has a critical role to play "at the 'front end' of the process. The 'sizing up' of the situation occurs intuitively on the basis of recognizing prototypes or detecting deviations from the decision maker's expectations" (Sinclair et al. 2009, p.404). Klein's recognition primed model is to some extent is consistent with Simon's (1987, p.63) definition of intuition as being "analyses frozen into habit."

The heuristics and biases perspective is associated with an alternative methodology, drawing upon laboratory studies, and favors an altogether more skeptical view of intuition than Naturalistic Decision-Making researchers (Kahneman and Klein, 2009). The heuristics and biases definition of intuition is "thoughts and preferences that come to mind without much reflection" (Kahneman, 2003). The heuristics and biases paradigm (Kahneman et al. 1982) demonstrated that "people did not adhere to the principles of optimal performance; subjects relied on heuristics as opposed to algorithmic strategies even when these strategies generated systematic deviations from optimal judgments as defined by the laws of probability, the axioms of expected utility theory, and Bayesian statistics" (Klein, 2011, p.72). This body of literature has highlighted that due to bounded rationality, individuals fall victim to a number of heuristics (also referred to as cognitive biases). Heuristics are mental short cuts or rules of thumb used to reduce complexity in decision-making and to cope with an abundance of information (Hodgkinson et al, 1999; Krabuanrat and Phelps, 1998; Schwenk, 1984). However, amongst novice decision-makers who have naïve schemas (in contrast to the complex domain relevant schemas of experts) these heuristics can lead to severe and systematic errors (Tversky and Kahneman, 1974). Table 2.5.1 shows the commonly studied types of heuristics which can be present in intuitive decision processes. Many of these heuristics are applicable to the SDMP, and can occur amongst novice decision-makers and when the SD is not familiar (Kahneman and Klein, 2009).

Table 2.5.1 Types of Heuristics and Biases (Adapted from Schwenk, 1988)

Heuristic	Manifestation
Availability	Judgments of probability of easily-remembered events become distorted
Selective perception	Expectations bias actual observations of relevant variables
Illusory correlation	Encourages belief that unrelated variables are correlated
Conservatism	Failure to sufficiently revise forecasts based on new information
Law of small numbers	Overestimation of the degree to which small samples are representative
Regression bias	Failure to allow for regression to the mean resulting in the attribution of causality when none exists
Wishful thinking	Probability of desired outcomes judged to be inappropriately high
Illusion of control	Overestimation of personal control over outcomes
Logical reconstruction	Logical reconstruction of events cannot be accurately recalled
Hindsight bias	Overestimation of predictability of past events

Fortunately however, Kahneman and Klein (2009) outline the commonalities of Naturalistic Decision-Making and Heuristics and biases. The authors conclude that for intuition to produce high quality decisions it is contingent upon two factors. The first is that the decision-maker possess expertise, the second is that the decision task must be a valid one. Expertise and the characteristics of the decision are contextual variables that are discussed in chapter 3 of this thesis. However, a brief explanation is provided here. Expertise develops in part through experience, and 10 years (or 10,000 hours) is considered to be the minimum period for expertise to develop in a domain (Ericsson, 2006; Salas et al. 2010). However, experience alone is not sufficient. Decision-makers must also have received precise, accurate and timely feedback, and they must also have engaged in deliberate practice; tasks which are demanding and stretch them beyond their current level of competence (Kahneman and Klein, 2009). Task validity refers to the extent to which the decision task provides reliable cues,

which are stable relationships between objectively identifiable cues and subsequent actions or between cues and the outcomes of possible actions (Kahneman and Klein, 2009).

Therefore, from this review of the social-psychology literature it is apparent that TMT expertise and SD specific characteristics, such as SD familiarity, may be potentially important moderating contextual variables that have not yet featured in intuition research in the SDMP domain. These contextual variables are reviewed in chapter 3 of this thesis, and are also discussed in detail in chapter 4, where this study's hypotheses are formulated. Table 2.5.2 presents the empirical studies examining intuition, and those empirical studies that have examined the contextual influences on intuition in the SDMP are reviewed in detail in chapter 3.

Table 2.5.2 A Summary of Empirical SDMP Research: Intuition

Study	Methodology		Description	Key Findings
	Sample	**Design**		
Mintzberg et al. (1976)	25 SDs	Case studies, longitudinal, multi-method	How organisations make SDs	Judgment is frequently used in SDM
Quinn (1980)	9 major corporations	Multiple case studies	Nature of SDMP	The SDMP is largely intuitive
Eisenhardt (1989)	8 microcomputer firms	Multiple case study; longitudinal; multi-method	Making fast strategic decisions in high-velocity environments	Decision-makers draw on deep personal knowledge, utilise real time information and consider multiple alternatives simultaneously to accelerate cognitive processes in order to make fast SDs which result in superior performance in high velocity environments
Wally and Baum (1994)	151 US organizations	Scenario based questionnaire, cross-sectional, multi-method	Personal and structural determinants of the pace of SDM	Use of intuition in SDM was positively associated with speedy decisions
Brouthers et al. (1998)	80 small Dutch firms	Field study, cross-sectional, mail survey	Examining the SDMP in small firms	Small firms rely extensively on intuition and is vital for establishing small firms
Krabuanrat and Phelps (1998)	5 Thai companies with significant UK operations	Case studies, longitudinal, interviews	Exploring the use of heuristics in SDM	Heuristics are commonly used in SDM, and often used in concert with rationality
Khatri and Ng (2000)	221 US companies	Field study; cross sectional; mail survey	The effects of intuitive synthesis in SDM on organisational performance	A positive relationship exists between intuitive synthesis and organizational performance in an unstable environment and a negative relationship exists in a stable environment

Study	Methodology		Description	Key Findings
	Sample	**Design**		
Sadler-Smith (2004)	141 SMEs in the UK manufacturing and computer services industries	Field study, survey, multi-method	The relationship between owner-manager cognitive style and organisational performance	The positive relationship between intuitive decision style and financial and non-financial performance, although this relationship was not moderated by environmental instability.
Elbanna and Child (2007a)	169 SDs in Egyptian manufacturing organisations	Field study, cross-sectional survey, drop-off/pick up method	The effect of intuition on SD effectiveness	Intuition had a non-significant negative effect on SD effectiveness, although when entered into the regression equation alone, it had a significant and negative effect on SD effectiveness. Performance moderated the effects of intuition, such that the negative effects were weaker for companies with high performance
Bingham and Eisenhardt (2011)	6 entrepreneurial IT firms	Multiple case study, semi-structured interviews, archival data, observation	The heuristics that firms learn from process experience	Firms learn heuristics from their internationalisation experiences
Dayan and Di Benedetto (2011)	155 Turkish firms	Field study, multi-method, mail survey, personal interviews	New product development team intuition and its ability to generate creative new products	Positive and linear relationship between turbulent conditions and intuition, and there was an inverted U-shaped relationship between intuition and new product creativity for teams with high experience and low stress
Dayan and Elbanna, 2011	155 Turkish firms	Field study, structured interviews	The antecedents of intuition and its implications for new product development projects	Experience, transactive memory system, team empowerment, decision importance and decision motives are significantly related to intuition. Intuition is positively related to product success and speed to market, with both high and low levels of market turbulence
Chaston and Sadler-Smith (2012)	137 small firms in UK creative industries	Field study, postal survey	The relationship between intuitive information processing and firm entrepreneurial orientation	No relationship between owner-manager intuitive information processing and entrepreneurial orientation

Study	Methodology		Description	Key Findings
	Sample	**Design**		
Elbanna et al. (2012)	169 SDs in Egyptian manufacturing organisations	Field study, cross-sectional survey, drop-off/pick up method	The antecedents and consequences of intuition in the SDMP	Decision uncertainty and company size are related to intuition, intuition significantly influences decision disturbance and environmental hostility moderates this relationship such that the higher the level of hostility, the greater the impact on decision disturbance
Baldacchino (2013)	74 technology entrepreneurs	Field study, think aloud protocol interviews, on-line survey	The role of intuition in entrepreneurial opportunity identification	Experienced entrepreneurs use intuition to help them identify entrepreneurial opportunities, and they also employ analysis to complement intuition to ensure that this intuition is not leading them astray.

2.6 Political Incremental SDMP Characteristics: Political Behaviour

This section provides a discussion concerning the definition of political behaviour, and section 2.6.1 reviews the SDMP literature that has featured political behaviour.

Two definitions of political behaviour demonstrate the opposing views of the concept, and how divided academic opinion is concerning the positive or negative influences of political behaviour in the SDMP. The present study adopts a negative perspective of political behaviour and adopts Allen et al's. (1979, p.77) definition of political behaviour as "intentional acts of influence to enhance or protect the self-interest of individuals or groups." However, Child et al. (2010, p.123) provide a less cynical view of political behaviour as "action(s) taken by decision makers in order to serve their own interests or those of the organisation." Hence, it is acknowledged in the present study that political behaviour may not always necessarily bear negative consequences for SDM.

Political behaviour is synonymous with the logical incremental perspective (Elbanna, 2006) and it has been argued that studies incorporating political behaviour are more representative of how SDs are made in practice (Child et al. 2010), that is, through an emergent process. The origins of the political perspective of SDM date back to the political science literature of the 1950s (Eisenhardt and Zbaracki, 1992), when the notion that organizations have multiple and conflicting goals was first introduced. The SDMP is particularly susceptible to political behaviour because SDs are complicated, often have a great magnitude of impact and can be uncertain (Child et al. 2010), thus provoking emotive responses and strong opinions amongst decision-makers.

Political behaviour is an important and firmly established characteristic of the SDMP owing to: (i) organizations consisting of individuals each with conflicting preferences and interests because of functional, hierarchical, professional, and personal factors; (ii) the most powerful members of the

TMT often getting their own way, and; (iii) decision-makers utilising political tactics such as coalition forming and restricting the flow of information, in order to enhance their own power-base (Hickson et al, 1986; Eisenhardt and Zbaracki, 1992).

The roots of political behaviour in the SDM literature date back to the seminal work of Cyert and March (1963) who argued that organizations are subject to conflicts of interest based on differences in goal preferences, and of Child (1972) who posited a theory of strategic choice, whereby the organisation's most-powerful determine strategic courses of action. Because SDs are "made among people by people for people they are a welter of action, interaction, and counteraction" (Hickson et al. 1986, p.54) and as such the SDMP is seen as being an inherently political process. Furthermore, because SDs involve the allocation of often scarce organisational resources, this too explains why the SDMP is subject to political behaviour (Child et al. 2010).

2.6.1 Political Behaviour in SDMP Research

Whilst some studies have conceptualised and operationalised political behaviour as an antecedent of the SDMP (e.g. Hickson et al. 1986), the majority of studies have modeled it as a characteristic of the SDMP (e.g. Bourgeois and Eisenhardt, 1988; Eisenhardt, 1989; Dean and Sharfman, 1993b; Dean and Sharfman 1996; Papadakis et al. 1998; Elbanna and Child, 2007a; Dayan et al. 2012). Hickson et al (1986) argue that together with complexity, the politicality inherent in an SD is the most important determinant of the characteristics of the SDMP. However, more commonly political behaviour is seen as a characteristic of the SDMP whereby "problem definition, data collection, and evaluation criteria are used as weapons to manipulate decision outcomes towards personal ends rather than tools to inform a final decision. Choice is a function of the organisational power distribution, as well as the relative effectiveness of the political tactics used by participants" (Dean and Sharfman, 1993b). Elbanna (2006) states that the aspects of political behaviour most frequently featured in the SDMP literature include: agenda control (Eisenhardt and Zbaracki, 1992); tactics of timing (Hickson et al.

1986); the use of outside expert consultants (e.g. Pfeffer, 1992); coalition formation (Child and Tsai, 2005); negotiation and bargaining (Papadakis, 1998); manipulation and control of information (Pettigrew, 1973), and; the use of power (Krishnan and Park, 2003).

There is empirical evidence to show that political behaviour in the SDMP has a detrimental effect on organizational and SDMP outcomes (Elbanna, 2006). For instance, both Dean and Sharfman (1996) and Elbanna and Child (2007a) found a significant and negative relationship between political behaviour and SD effectiveness. Elbanna and Child (2007a) also identified that SD motive and past organisational performance moderated the effects of political behaviour on SD effectiveness. Furthermore, based on case studies of organisations operating in the high velocity microcomputer industry, Bourgeois and Eisenhardt (1988) and Eisenhardt and Bourgeois (1988) identified a negative association between political behaviour and organisational performance. The rationale for political behaviour having negative consequences is due to the following: (i) the restriction and distortion of information results in SDs being taken on the basis of incomplete information (Pettigrew, 1973; Dean and Sharfman, 1996); (ii) an incomplete understanding of the external environment as the SDMP will be 'inwards looking' and focused on internal constraints and resources as opposed to examining what is feasible given the external factors at play (Dean and Sharfman, 1996), and; (iii) political behaviour is thought to slow the SDMP, resulting in the loss of opportunities and first mover advantages (Eisenhardt, 1989; Pfeffer, 1992).

However, there is an alternative view which brings into question the assumption that political behaviour has negative implications for SDMP outcomes. Some authors have suggested that politics are essential to organisations and that "creating effective change and adaptation within organisations depends upon effective use of politics" (Eisenhardt and Zbaracki, 1992, p.26). The main thrust of the arguments suggesting political behaviour can positively influence SDMP outcomes is based upon Ashby's (1956) theory of requisite variety, whereby in complex environmental contexts, SDMPs will

only produce positive outcomes if multiple perspectives are considered and debates are had. Child et al. (2010) argue that a more balanced view of political behaviour is required, and that such processes can produce effective debate, as well as the consideration of multiple options and different viewpoints. Indeed, Eisenhardt et al. (1997) posits that political behaviour is an essential adaptation mechanism in rapidly changing external environments, and Mintzberg (1985) identifies functional benefits of political behaviour for both the SDMP and the organisation. Furthermore, Mintzberg (1998) argues for the beneficial role of political behaviour at various stages of the SDMP. For instance, in the preparation stage, political behavior ensures that the decision is debated and multiple views are taken into account. At the decision-making and implementation stages, political behaviour can force through necessary changes that may be otherwise blocked by formal channels. Also, Simmers (1998) proposes two dimensions of political behaviour; competitive politics, where decision-makers act in their own interests, and collaborative politics where decision-makers support one-anther regardless of disputes and conflicts. Simmers (1998) found quality and speed were strongly related to collaborative politics, and that goal achievement and unrestricted funds were weakly associated with collaborative politics. Furthermore, Dayan et al (2012) found that political behaviour amongst new product development teams had a significant and positive effect on speed to market. Finally, Olson et al. (2007a) and Parayitam and Dooley (2009) focused specifically on task and cognitive conflict, constructs which concentrate on differences of opinion and disagreements between TMT members over the SD. Together, these two studies found positive effects of conflict on SD quality, commitment and understanding. However, the effects of political behaviour specifically (as opposed to conflict) on commitment and understanding remain unexplored.

Other studies have been unable to find any significant relationships between organisational outcomes such as performance and political behaviour (Woolridge and Floyd, 1990; Papadakis, 1998). Thus, it is likely to be the case that the relationship between political behaviour and SDMP outcomes varies according to the context or from one SD to the next (Child et al. 2010; Dayan et al, 2012). Dayan et al. (2012) highlight that the existing literature has largely examined the influence of political

behaviour on SD effectiveness and organizational performance, and future research should extend the range of SDMP outcomes considered. Furthermore, as Child et al. (2010, p.131) state the "relationship between political behaviour and decision quality is not a simple one and more attention needs to be directed toward the role of the 'third factor' or moderating variables on this relationship."

A number of empirical studies have examined the contextual influences on political behaviour in the SDMP and these are reviewed in detail in chapter 3. Table 2.6.1 shows the major empirical studies examining political behaviour in the SDMP.

Table 2.6.1 A Summary of Empirical SDMP Research: Political Behaviour

Study	Methodology		Description	Key Findings
	Sample	Design		
Allison (1971)	Case study of the 1962 Cuban missile crisis	Single case study, content analysis, structured interviews	Government political processes in response to a crisis	Outcomes are a result of bargaining games among players in Government
Pettigrew (1973)	1 British retailer	Single case study, multi-method	Decision process for purchasing a computer system	Decision process is fundamentally a political struggle, and control over communication channels is critical to the outcomes of the process.
Pfeffer and Salancik (1974)	University of Illinois	Single case study, longitudinal, multi-method	Relationship between department power and resource allocation	Resources received correlate with department power; powerful departments get more scarce resources
Gandz and Murray (1980)	428 graduates and MBA students	Field based, cross-sectional, mail survey	Manager's perceptions of politics; sources of politics	Political behaviour is pervasive in organisations and managers are ambivalent about politics
Quinn (1980)	9 major corporations	Multiple case studies	Nature of the SDMP	The organisation is a political system where managers develop broad strategies, yet implement them opportunistically
Hickson et al. (1986)	150 SDs in 30 British organisations	Multiple case studies, longitudinal, multi-method	The influence of cleavage (politicality) on the characteristics of the SDMP	Cleavage (politicality) emanates from the division of labour, and together with the complexity inherent in an SD comprise the 'decision matter'. It is the decision matter that influences the characteristics of the SDMP most of all.
Bourgeois and Eisenhardt (1988)	4 organisations in the micro-computer industry	Multiple case studies, longitudinal, multi-method	Political behaviour amongst TMT members of organisations operating in high-velocity environments	When power is centralised in the hands of the CEO and not vested to other members of the TMT, political behaviour is greater. In high velocity environments, political behaviour is associated with poor performance.
Eisenhardt and Bourgeois (1988)	8 organisations in the micro-computer industry	As that of Bourgeois and Eisenhardt (1988)	As that of Bourgeois and Eisenhardt (1988)	Political behaviour is more prevalent when power imbalances amongst TMT members exist; effective firms avoid political behaviour.

Study	Methodology		Description	Key Findings
	Sample	**Design**		
Dean and Sharfman (1993b)	61 SDs in 24 organisations	Field study, cross-sectional, structured interviews	The relationship between political behaviour and rationality in the SDMP	Political behaviour and rationality are independent dimensions of the SDMP
Sabherwal and King (1995)	81 US manufacturing and service sector organisations	Mail survey	Taxonomy of the SDMP relating to applications of information systems	Five alternatives for SDMPs concerning strategic information systems: Planned; provincial; incremental; fluid, and; political. Each alternative is distinct in terms of the activities, influences and conditions which cause each type
Dean and Sharfman (1996)	52 SDs in 24 US manufacturing organisations	Field study, multiple-respondents, longitudinal	The relationship between political behaviour and SD effectiveness	Political behaviour has a significant and negative effect on SD effectiveness
Eisenhardt et al. (1997)	12 technology-based organisations	Multiple case-studies, longitudinal, multi-method	The interplay between conflict, politics and speed in the SDMP	Successful SDs are made when there is active and broad conflict over issues, without sacrificing SD speed
Papadakis et al. (1998)	70 SDs in Greek manufacturing organisations	Field study, cross-sectional, multi-method	The effects of contextual variables on the characteristics of the SDMP	Political behaviour and problem-solving dissension are significantly influenced by SD specific characteristics, (uncertainty and pressure), the external environment (environmental heterogeneity), and firm characteristics (planning formality performance, and corporate control)
Papadakis (1998)	As in Papadakis et al. (1998)	As in Papadakis et al. (1998)	The relationship between organisational performance and the characteristics of the SDMP	Significant correlations between market share and sales growth and politicization; and sales growth and problem solving dissension
Simmers (1998)	140 senior officers	Field study, cross sectional, multi-method	The relationship between politics and outcomes	Different relationships between collaborative politics and outcomes compared to competitive politics and outcomes
Papadakis et al. (1999)	A major Greek chemical company	Case-study, longitudinal, multi-method	How perception of problem (threat vs. opportunity) affects the characteristics of the SDMP	Different motives result in different SDMPs

Study	Methodology		Description	Key Findings
	Sample	**Design**		
Hickson et al. (2003)	55 SDs in UK organisations	Case studies, longitudinal, multi-method	Implementation strategies	Political behaviour can be avoided in the implementation of SDs by communicating effectively with key stakeholders
Miller et al. (2004)	As in Hickson et al. 2003	As in Hickson et al. 2003	As in Hickson et al. 2003	As in Hickson et al. 2003
Child and Tsai (2005)	3 multinational organisations and 4 local organisations	Case-studies, longitudinal, multi-method	The Dynamic between firms' environmental strategies and institutional constraints in emerging economies	Multinational organisations engage in political behaviour through public relations, co-optation and lobbying
Elbanna and Child (2007a)	169 SDs in Egyptian manufacturing organisations	Field study, cross-sectional survey, drop-off/pick up method	The effects of SDMP characteristics on SD effectiveness and the moderating role of SD-specific characteristics, the external environment and firm characteristics	Political behaviour is significantly and negatively related to SD effectiveness. Decision motive and performance moderate the relationship between political behaviour and SD effectiveness
Olson et al. (2007a)	85 US hospitals	Field study, cross-sectional, mail survey, multi-informant	The effects of cognitive diversity, conflict, and trust on SDMP outcomes	Task conflict is significantly and positively related to decision quality, commitment and understanding. Cognitive diversity positively influences task conflict, and this effect is strengthened by competence-based trust
Parayitam and Dooley (2009)	109 US hospitals	Field study, cross-sectional, mail survey, multi-informant	How the inter-play between conflict and trust affects SDMP outcomes	Cognitive conflict is positively related to both decision quality and decision commitment. Affective conflict is not negatively related to decision quality but is negatively related to decision commitment. Cognition-based and affect-based trust have differing moderating effects
Dayan et al. 2012	103 Turkish organisations	Field study, cross-sectional, mail survey	Antecedents and outcomes of political behaviour in new product development teams	Project importance and team functional diversity are positively related to political behaviour; project motive (crisis) is negatively related to political behaviour. Technological turbulence moderates the effects of uncertainty on political behaviour. Political behaviour is positively related to speed to market

2.7 Summary and Implications

This chapter has summarised the SDMP literature with a focus on procedural rationality, comprehensiveness and behavioural integration, as characteristics chosen to represent the synoptic-formalism perspective of SDM. This chapter has also reviewed the SDMP literature with regards to intuition and political behaviour, which have been taken as representative of the political-incrementalism perspective. There is considerable empirical evidence that the SDMP is multi-dimensional (e.g. Dean and Sharfman, 1993b; 1996; Elbanna and Child, 2007a; Papadakis et al. 1998) which necessitates empirical research which adopts both synoptic-formal and political-incremental perspectives. As much of the extant research has focused on one particular SDMP characteristic, most frequently rationality or comprehensiveness, the present study attempts to address this limitation by developing and testing a multi-dimensional SDMP model.

This chapter has also highlighted how there has been a tendency not to discriminate between rationality and comprehensiveness, despite significant differences in their definition and operationalisation. In order to provide insights to reconcile the conflicting findings of prior rationality and comprehensiveness studies, the present study includes both in order to discern (i) if they are discrete constructs, and (ii) how they each influence SDMP outcomes, and are influenced by contextual variables.

Furthermore, because SDMP characteristics such as rationality and comprehensiveness do not capture the complex social interactions between decision-makers; behavioural integration is also incorporated so as to measure the quality of ideas and information being exchanged, as well as the decision-makers' social cohesion.

Also, intuition has been identified as a vitally important construct for SDMP research because it portrays the process in a more realistic light (Eisenhardt and Zbaracki, 1992) and reveals how decision-makers are able to cope with a surfeit of information and severe time constraints when making SDs (Hodgkinson et al. 2009). The social-psychology literature has also been reviewed to elucidate insights to reconcile the conflicting findings of extant SDMP studies of intuition. This literature highlights the expertise of the decision-makers and the nature of the decision (i.e. its familiarity) as potentially critical contingency variables, which have not previously been applied in SDMP research.

Finally, political behaviour has been discussed as the fifth SDMP characteristic because organisations are inherently political systems and SDs reflect the preferences of the most powerful TMT members (Eisenhardt and Zbaracki, 1992; Dean and Sharfman, 1996; Hickson et al, 2001). Whilst empirical evidence suggests that political behaviour has largely negative effects on SDMP outcomes, the moderating influence of contextual variables has not been adequately explored and there are compelling arguments to suggest political behaviour may positively influence SDMP outcomes and is essential to promote effective organisational change and adaptation.

Overall, empirical evidence is inconclusive concerning the effects of procedural rationality, comprehensiveness, intuition and political behaviour on SDMP outcomes, whilst behavioural integration has not previously featured within the SDMP literature. However, these inconclusive findings may be as a result of over-simplified models applied to a complex phenomenon (Elbanna and Child, 2007a). The effects of SDMP characteristics on SDMP outcomes are contingent on the influence of contextual factors, and the present study attempts to address an important gap in the literature by examining previously unexplored moderating effects of contextual variables. Furthermore, many studies have focused on a narrow range of SDMP outcomes, such as

organisational performance, and have frequently omitted other important outcome variables such as implementation success, and SD speed.

In the next chapter (chapter 3) the influence of contextual variables on the SDMP is explored through a review of the literature, and in chapter 4, the conceptual model and hypotheses are presented.

CHAPTER 3 – THEORETICAL BACKGROUND: THE ROLE OF CONTEXT

3.1 Introduction

The previous chapter critically reviewed the SDMP literature with respect to five SDMP characteristics (rationality, comprehensiveness, behavioural integration, intuition, and political behaviour) which are each associated with one of two perspectives which pervade the SDMP literature—synoptic formalism or political-incrementalism. The present chapter builds upon chapter two by critically reviewing the SDMP literature, with a focus on identifying the effects of different contextual variables. The overall lack of a systematic treatment of contextual variables in the literature has resulted in "an incomplete, and perhaps inaccurate, picture of SDM (strategic decision-making)" (Hough and White 2003, p.488). Therefore, it is essential to examine the role of context in order to explain: (i) variance in the characteristics of the SDMP (Papadakis et al. 1998), and; (ii) the effects of SDMP characteristics on SDMP outcomes, because these relationships are subject to interaction effects between SDMP characteristics and context (Elbanna and Child, 2007a).

In accordance with prior studies (e.g. Rajagopalan et al. 1993; Rajagopalan et al. 1997; Sharfman and Dean 1997b; Papadakis et al. 1998; Papadakis and Barwise, 2002) in the present study, context consists of the TMT, SD specific characteristics, the external environment and firm characteristics. Each of these four categories of context are associated with a different theoretical perspective (Elbanna and Child, 2007a; Papadakis et al. 1998). The TMT is associated with the Upper Echelons perspective (Hambrick and Mason, 1984) or strategic choice perspective (Child, 1972). This perspective emphasises the discretion that the TMT has in influencing the direction of the organisation through the choices that they make. As such, the characteristics and outcomes of the SDMP are influenced by the idiosyncrasies of the TMT (Papadakis and Barwise, 2002). The SD specific characteristics perspective posits that the labels and categories that are attributed to an SD (e.g. familiarity, magnitude of impact, uncertainty) shape the subsequent decision process and outcomes (Papadakis et al. 1998). The external environment is associated with the environmental

determinism perspective, which views the characteristics and outcomes of the SDMP as being largely determined by the forces of the external environment in which the organisation operates (Aldrich 1979; Hannan and Freeman 1977). Finally, the firm characteristics perspective views the most significant influence on the characteristics and outcomes of the SDMP as being the unique attributes of the organisation in which the SDMP takes place, such as organisational structure, slack resources, size etc.

Most existing SDMP studies focus only a limited number of contextual variables, which has resulted in contradictory findings and left SDMP scholars unable to answer the question "what are the key contextual influences on the SDMP?" (Papadakis and Barwise, 1997b). Inconsistencies among existing studies highlight the need for future research to pay close attention to context (Elbanna and Child, 2007b). For example, the implications of comprehensiveness for organisational performance remain unclear, with Fredrickson and Mitchell (1984) finding negative effects, and Bourgeois and Eisenhardt (1988) finding positive effects. Closer scrutiny of context will reveal insights which can help to reconcile such contradictory findings. Moreover, a priority for SDMP research is to identify the extent to which variance in the characteristics of the SDMP is explained by the context in which it takes place (Papadakis et al. 1998; Rajagopalan et al. 1997), and Elbanna and Child (2007b) and Pettigrew (2003) emphasise that the rationality of the SDMP cannot be fully understood unless we comprehend its context. Furthermore, it is vitally important to examine interactions between contextual variables and SDMP characteristics, because such interactions have significant implications for SDMP outcomes (Elbanna and Child, 2007a; Papadakis et al. 2010).

In any study of the SDMP it is imperative to include variables associated with each of the four categories of contextual variables in order to understand not only the individual impact of contextual variables but also to examine the overall influence of each theoretical perspective (Elbanna and Child, 2007b; Papadakis et al, 2010). Thus, integrative models of the SDMP which include variables from

each of the four categories of contextual variables can reveal the relative importance of each theoretical perspective for explaining variance in the characteristics and outcomes of the SDMP.

Therefore, this chapter reviews the SDMP literature with respect to the effects of contextual variables, and incorporates all four different theoretical perspectives that influence the strategic decision-making process. Section 3.2 focuses on the strategic choice or upper echelons perspective and reviews the literature examining the influence of TMTs on the SDMP. Section 3.3 examines studies focusing on the effects of SD specific characteristics on the SDMP. Section 3.4 reviews studies that have tested the influence of the external environment on the SDMP, and section 3.5 focuses on the influence of firm characteristics on the SDMP. Furthermore, this chapter discerns the direct effects of context on SDMP characteristics and outcomes, as well as the moderating influence on the relationship between SDMP characteristics and outcomes. This chapter ends with section 3.6, which states the major conclusions, as well as the theoretical and methodological implications arising from the literature review covered in this chapter and chapter 2.

3.2 The Strategic Choice or Upper Echelons Perspective

The TMT is the dominant coalition of the organisation's most senior executives who have responsibility for setting the overall direction of the organisation (Carpenter et al. 2004; Hambrick and Mason 1984). The strategic choice perspective posits that TMTs are able to influence the direction and fortunes of their organisations through the choices that they make (Child, 1972). The upper echelons perspective builds upon strategic choice theory, and its central premise is that "executives' experiences, values and personalities greatly influence their interpretations of the situations they face, and, in turn, affect their choices" (Hambrick, 2007, p.334). Studies reviewed in this section are therefore predicated on the concept of bounded rationality; whereby complex decisions, such as strategic ones, are the product of behavioural influences as opposed to economic utility maximising processes (Cyert and March 1963; March and Simon 1958). Bounded rationality reflects the inherent

cognitive limitations of decision makers which restricts their ability to collect and analyse all relevant information and identify all possible alternatives (Griffith et al. 2012).

This section consists of two parts, and section 3.2.1 reviews studies featuring TMT demographic variables, and section 3.2.2 features studies examining TMT psychometric variables. TMT variables have been modelled only as antecedents of SDMP characteristics and outcomes, and as yet their moderating influence on the relationship between SDMP characteristics and outcomes have not been examined. Also included in this section are studies examining the influence of CEO variables on the SDMP, because the CEO is cited as the most powerful and influential member of the TMT (Hambrick, 2007). Demographic variables reviewed in this section include age, tenure, experience, education and diversity. Psychometric variables reviewed in this section include cognitive diversity, cognitive style, personality, experience, and expertise.

3.2.1 TMT Demographic Variables

Hambrick and Mason (1984) encouraged researchers to adopt demographic variables as proxies for the underlying cognitive and behavioural traits of the TMT. The authors argue in favour of demographic proxies as opposed to direct measures owing to: (i) their convenience, because obtaining data for psychometric variables can be intrusive and time consuming, and executives are often reluctant to participate in such research; (ii) some demographic variables do not have psychological equivalents, and; (iii) demographic variables can be readily used in practice, for executive selection and development (Hambrick and Mason, 1984). Therefore, the studies reviewed in this section attempt to explain variance in the characteristics of the SDMP through the demographics of the TMT. Demographic variables reviewed include TMT age, tenure, experience, education and diversity.

3.2.1.1 Age

The age of TMT members has been shown to affect SD speed, entrepreneurial behaviour in the SDMP, as well as the evaluations formed and criteria used during the SDMP. The findings of Brouthers et al. (2000) show that young members of the TMT are more entrepreneurial in the SDMP (taking risks, being proactive and innovative) compared to older managers, who behave more conservatively. Forbes (2005) found that older executives of new ventures make faster SDs than their younger counterparts. Furthermore, Hitt and Tyler's (1991) study of top executives established that age moderates the relationship between the use of objective criteria and the evaluation of a specific type of SD; acquisition candidates. Younger executives were more likely to form a positive evaluation of an acquisition candidate, and use different criteria to do so (Hitt and Tyler 1991). Finally, Goll and Rasheed (2005) were unable to find empirical support for their hypothesis that the average age of the TMT was positively related to rationality (continuous proactive search, extensive analysis and formal planning).

3.2.1.2 Tenure

The tenure of both the TMT and CEO has been found to directly affect the characteristics of the SDMP, such as hierarchical decentralisation and rationality. Papadakis et al. (1998) and Papadakis and Barwise (2002) studied the CEO, often cited as the most powerful member of the TMT (Hambrick and Mason 1984), and found CEO tenure (length of service in the company) to be positively related to hierarchical decentralisation (participation of middle-managers) in the SDMP. There is also evidence that TMT tenure (average length of tenure with the company) has a positive association with rationality (Goll and Rasheed 2005), although Iaquinto and Fredrickson (1997) did not find any significant effect of the average organisational tenure of the TMT and agreement about the comprehensiveness of the SDMP (comprehensiveness in situation diagnosis, alternatives generation/evaluation and decision integration). However, changes in TMT intra-firm tenure (change in average length of service with the firm) have been found to be positively associated with changes in

SDMP comprehensiveness (Fredrickson and Iaquinto, 1989). Finally, CEO tenure has a significant and positive influence on behavioural integration, whilst TMT tenure has no significant effect (Simsek et al. 2005).

3.2.1.3 Experience

Researchers have investigated how the amount of experience and type of functional experience of the TMT affect the SDMP, and findings suggest that experience influences SD speed as well as the information used in the SDMP. Hitt and Tyler (1991) found that the level and the experience of the executive (both in terms of the total amount of work experience and the combination of different functional experiences) moderates the relationship between the use of objective criteria in the SDMP and evaluations formed of acquisition candidates, although the direction of the moderation is not stated by the authors. Furthermore, the relationship between experience and the speed of the SDMP appears to be dependent on the external environment; Judge and Miller (1991) determined that board experience (average tenure on the Board, average age, and average years working in the industry) was negatively related to SD speed in non-profit hospitals, but in the textiles and bio-technology industries, the relationship was positive. Finally, Forbes (2005) found that entrepreneurs with prior venture experience make faster SDs.

As well as the amount of experience, the type of functional experience appears to affect the SDMP. Brouthers et al. (2000) identified that departmental experience influenced the extent to which members of the TMT rely upon organisation structure as a determinant of strategic aggressiveness; with TMT members from finance and accounting backgrounds more predisposed to rely on organisational structure than TMT members with generalist backgrounds. Brouthers et al. (2000) were however unable to detect a significant moderating effect of executive level on the relationship between environmental factors and strategic aggressiveness.

3.2.1.4 Education

Hambrick and Mason (1984) posit that education level serves as a proxy for the knowledge and skill set of the TMT and CEO. There is evidence that the education level of the TMT is positively related to rational and comprehensive SDMPs (comprehensiveness in situation diagnosis, alternatives generation/evaluation and decision integration) (Goll and Rahseed 2005; Papadakis and Barwise 2002). Similarly, Papadakis et al. (1998) found that the CEO's level of education was significantly related to the use of financial reporting in the SDMP. It should be noted however, that some studies have failed to find significant effects of the education level of the CEO and TMT on the SDMP. Papadakis and Barwise (2002) were unable to find a relationship between CEO education and characteristics of the SDMP (comprehensiveness, hierarchical decentralisation, lateral communication, and politicisation), and Hitt and Tyler (1991) found that an executive's level of education did not moderate the relationship between objective criteria and the evaluation of acquisition candidates. Brouthers et al. (2000) were also unable to detect a moderating effect of manager education level on the relationship between environmental factors and aggressiveness in the SDMP. Hitt and Tyler (1991) did however provide empirical evidence that an executive's degree type moderates the relationship between the use of objective criteria and the evaluation of acquisition candidates.

3.2.1.5 Demographic Diversity

Demographic diversity is heterogeneity in the age, tenure, experience and education of the TMT, and there is mixed evidence concerning the effects on the characteristics of the SDMP such as comprehensiveness and flexibility. Simons et al. (1999) identified that the relationship between TMT demographic diversity and company performance was partially mediated by SDMP comprehensiveness (exhaustiveness and inclusiveness in making and integrating SDs), and that TMT debate positively moderated the relationship between TMT demographic diversity and SDMP comprehensiveness. Simons et al*'s* (1999) findings also suggest that job-related TMT demographic

diversity variables (e.g. company tenure diversity and functional experience diversity) have a more significant effect on SDMP comprehensiveness than non job-related TMT diversity variables (e.g. age diversity). Sharfman and Dean (1997a) however, were unable to find a significant relationship between TMT heterogeneity (number of functions represented by the decision making team) and flexibility, defined as openness and recursiveness in the SDMP. Dayan et al. (2012) found that whilst functional diversity resulted in political behaviour, demographic diversity (age, ethnicity and gender) did not. Finally, Simsek et al. (2005) found that educational diversity was significantly and positively related to behavioural integration, but neither diversity in tenure nor function had any significant effect on behavioural integration.

3.2.2 TMT Psychometric Variables

The use of demographic variables as proxies for the underlying cognitive and behavioural traits of the TMT has been met with criticism (Papadakis et al. 2010), and the extent to which demographic variables are valid surrogates for the psychological constructs they purport to represent has been questioned (Lawrence, 1997; Priem et al. 1999; Hough and ogilvie, 2005). This criticism has been labelled the 'black box' criticism because demographic measures sacrifice explanatory power for predictive ability (Priem et al. 1999) and recently researchers have been urged to adopt direct measures of the constructs of interest as opposed to adopting demographic proxy measures (Lawrence, 1997). Whilst methodologically convenient, demographic proxies leave a 'black box' (Lawrence, 1997) of unexplained cognitions, values and perceptions that influence the SDs made by executives (Carpenter et al. 2004). Furthermore, empirical evidence suggests that demographic variables are *not* reliable proxies for psychometric variables. For instance, Kilduff et al (2000) found no relationship between demographic diversity and cognitive diversity. Hambrick and Mason (1984, p.196) acknowledge themselves the limitations of demographic variables: "demographic indicators may contain more noise than purer psychological measures. For example, a person's educational background may serve as a muddied indicator of socioeconomic background, motivation, cognitive style, risk propensity, and other underlying traits." Therefore, another stream of research has adopted

direct psychometric measures of the TMT to attempt to explain variance in SDMP characteristics. Studies reviewed in this section include cognitive diversity, cognitive style, personality, experience, and expertise.

3.2.2.1 Cognitive diversity

Cognitive diversity refers to differences in TMT members' beliefs and preferences about strategic goals, and appears to affect conflict and comprehensiveness in the SDMP as well as SDMP outcomes such as commitment and SD quality. Olson et al. (2007a) found that cognitive diversity has a positive effect on task conflict in the SDMP (disagreements and differences in judgment), and that competence-based trust strengthens the relationship. The authors also provide empirical evidence that task conflict mediates the relationship between cognitive diversity and decision outcomes, including understanding, commitment and SD quality. Olson et al. (2007b) identified a significant and negative effect of cognitive diversity on commitment and SD quality. Furthermore, the negative effect of cognitive diversity on commitment was reduced for teams with affect-based trust (trust founded on emotional bonds). The negative effects of cognitive diversity on SD quality were reduced for teams with affect based trust and cognition based trust (trust founded on ability and competence). Cognitive diversity also appears to have a negative effect on SDMP comprehensiveness (Miller et al. 1998), defined as the extent to which the SDMP is extensive in terms of the analysis undertaken and number of alternatives considered. Finally, cognitive diversity is significantly and negatively associated with behavioural integration (Simsek et al. 2005).

3.2.2.2 Cognitive Style

Cognitive style refers to "individual differences in preferred ways of organising and processing information and experience; an individual difference in how people perceive, think, solve problems, learn, and relate to each other" (ogilvie and Hough, 2011, p.125). Cognitive style has been shown to

affect the outcomes of the SDMP, including SD quality and perceived effectiveness, as well as certain characteristics of the SDMP such as the level of aggression and tolerance of ambiguity. Indeed, evidence of a relationship between the cognitive style of experienced managers and SDMP outcomes (SD quality, perceived effectiveness, and decisiveness) was provided by Hough and ogilvie (2005), although the authors did not specify the effects of cognitive style on SDMP characteristics and proposed direct effects of cognitive style on SDMP outcomes. Hough and ogilvie's (2005) study showed iNtuiting/Thinking managers (who rely on intuitive processes and make logical cause and effect connections) are more decisive and make higher quality SDs; and that Thinking managers and Extraverted managers (who draw energy from the outer world) are perceived to be most effective. Henderson and Nutt (1980) and Nutt (1993) found executive cognitive style influenced the decision to adopt a capital expansion project and was also related to the level of aggression, tolerance of ambiguity and uncertainty, and assessment of risk in the SDMP. Nutt (1990) used a simulation to highlight how executive cognitive style determined the likelihood of taking strategic action as well as the perceived risk in taking the action, but that the decisions of top executives were more style dependent than those of middle managers. The study also identified that cognitive style determines the type of data and mode of data processing used in the SDMP.

3.2.2.3 Personality

Personality is defined as "characteristic patterns of behaviour, thoughts, and feelings" Carver and Scheier (2000, p.5). Studies of TMT and CEO personality have produced confounding results, although overall it is apparent that both TMT and CEO personality affect the characteristics of the SDMP as well as SD speed. Papadakis et al. (1998) and Papadakis and Barwise (2002) examined the effects of CEO risk propensity, need for achievement, and TMT aggressive philosophy on SDMP characteristics. Papadakis et al. (1998) found that CEO risk propensity (willingness to take risks or to avoid them) was negatively related to rule formalisation (standardised procedures), whereas Papadakis and Barwise (2002) found no significant effect of CEO risk propensity on any

characteristics of the SDMP and Brouthers et al. (2000) could not find support for a moderating effect of manager risk propensity on the relationship between environmental factors and strategic aggressiveness. Hitt and Tyler (1991) were also unable to find any significant effects for executive risk propensity and cognitive complexity on the relationship between objective criteria and the evaluations of acquisition candidates. Furthermore, Papadakis and Barwise (2002) found no significant effects of CEO need for achievement (desire to attain success and excellence and accomplish difficult tasks), except for a weak and negative relationship with hierarchical decentralisation. In contrast, Miller et al. (1988) found that CEO need for achievement had a positive effect on SDMP rationality (analysis of decisions, planning, systematic scanning of environments and explicitness of strategies). The discrepancy in the findings of Miller et al (1988) and Papadakis and Barwise (2002) may be due to the focus of Miller et al. (1988) on small firms, where the effect of the CEO on the SDMP is likely to be stronger than compared to large organisations. There is also evidence to suggest that CEO tolerance for risk, cognitive ability, use of intuition and propensity to act are positively associated with SD speed (Wally and Baum 1994).

Finally, TMT aggressive philosophy (determination to beat competition) has been found to be positively related to comprehensiveness, hierarchical decentralisation, rule formalisation and lateral communication (participation of major departments) in the SDMP (Papadakis et al. 1998; Papadakis and Barwise 2002).

3.2.2.4 Experience

Experience, using reflective measures, has been examined in the context of new product development (Dayan and Elbanna, 2011; Dayan and Di Benedetto, 2011). These studies, instead of using objective data such as number of years of functional experience, used a two item measure which assessed: (i) whether there was a critical mass of experienced people who had developed and launched similar products before, and; (ii) whether team members brought with them a wealth of information gained

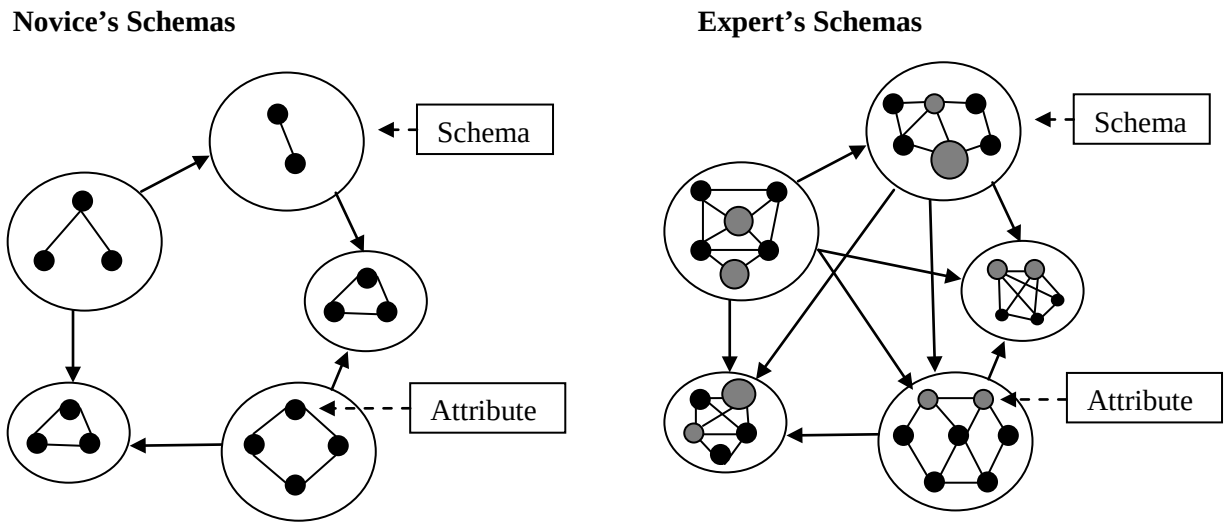
from prior assignments within the company. Dayan and Elbanna (2011) found that past team member experience was positively and significantly related to the use of intuition in new product development projects. Furthermore, this relationship was moderated by environmental turbulence, such that the higher the level of turbulence, the greater the positive impact of experience on intuition. Dayan and Di Benedetto (2011) found that experience moderates the inverted U-shaped relationship between intuition and new product creativity. Teams scoring highly on experience exhibited higher levels of creativity when using intuition than those with low scores for experience.

3.2.2.5 Expertise

Hambrick and Mason (1984, p.203) state that "it is doubtful that this (upper echelons) research stream can progress far without greater attention to relevant literature in related fields, especially psychology and social-psychology." Hence, this section draws upon the social-psychology literature to explain the importance of the concept of expertise for research examining the influence of the TMT on the SDMP. Expertise is a concept that has yet to feature in the SDMP literature, despite a burgeoning body of literature in social-psychology highlighting its importance for determining the effectiveness of intuitive decision processes. This section explains the concept of expertise, reviews the social-psychology literature briefly, and examines the utility of expertise for explaining the SDMPs of TMTs.

Expertise is a "high level of domain specific knowledge" (Dane, 2010, p.580). As depicted in figure 3.2, experts have large and complex schemas, which are cognitive structures containing a substantial number of attributes (e.g. research, teaching) and relationships between attributes (e.g. research enhances teaching) (Dane, 2010).

Figure 3.2 Expert and Novice Schemas (Adapted from Dane, 2010)



The cognitive architecture of experts endows them with the ability to pattern match; that is to detect stimuli and rapidly match them to information which has been encoded and stored in their schemas (Drillings and Serfaty, 1997). Schemas are "cognitive representations of attributes and the relationships between them...active cognitive structures which frame problems" (Schwenk 2005, p.83). The schemas of the TMT have a pervasive effect on the SDMP; determining how the TMT scan for information, diagnose cause-effect relationships, and make strategic choices (Barr et al. 1992; Huff 1982; Daft and Weick 1984; Marcel et al. 2011; Nadkarni and Narayanan 2007). Expertise is therefore a critical concept in any type of decision-making research because experts are able to make superior decisions, exhibit better recall, and solve problems more effectively (Chi et al, 1988; Ericsson, 2006; Hoffman, 1992). Executives with high levels of expertise have complex, domain relevant schemas which are primed in order to detect cues that relate back to previously experienced patterns (Sadler-Smith and Shefy, 2004). Furthermore, experts use different decision processes compared to novices; they know when exactly to use a certain decision process (Louis and Sutton, 1991), and are able to employ a combination of rational and intuitive decision making modes (Salas et al. 2010). Finally, experts are more effective at utilising intuitive decision processes (Dane and Pratt, 2007; 2010; Kahneman and Klein, 2009).

"Expertise enables decision makers to frame problems rapidly and identify the appropriate course of action long before they are able to articulate their reasoning as to why that course of action is appropriate" (Hodgkinson et al. 2009, p.287). Despite expertise being widely acknowledged as a vitally important concept in decision-making (Dane and Pratt, 2007; 2009; Kahneman and Klein, 2009; Hodgkinson et al, 2009; Salas et al. 2010), there is very little empirical research on the subject, and no empirical studies of expertise in the strategy literature were identified, despite Eisenhardt's (1989, p.570) observations concerning how experts use intuition: "executives making fast decisions accelerate their cognitive processing...a deep personal knowledge of the enterprise that allows them to access and interpret information rapidly." There is however a large conceptual body of literature which emphasises how expertise has considerable utility for explaining both the characteristics and outcomes of the SDMP, because expertise is likely to interact with SDMP characteristics to influence the outcomes of the process.

The complex, domain-relevant schemas of the TMT, which contain a significant amount of knowledge about a specific area of expertise, are important because they determine how effective intuition is (Clarke and MacKaness 2001; Dane and Pratt 2007; Kahneman and Klein 2009; Salas et al. 2010), and as such are likely to moderate the relationship between intuition (as a characteristic of the SDMP), and the success of the decision. For intuitive SDMPs to result in effective SDs, the complex domain relevant schema of the TMT are essential because intuition is a pattern matching process, whereby decision stimuli are equated with information that has been encoded and stored in the complex domain relevant schema through years of experience (Kahneman and Klein 2009). Without complex domain relevant schemas intuition is less effective because it is based on heuristic schemas which are far simpler and can therefore lead to severe and systematic errors in decision-making (Dane and Pratt 2007).

In social-psychology, there is a relatively large body of literature that has examined the concept of expertise and expert performance (e.g. Chase and Simon, 1973; Dreyfus and Dreyfus, 1986; Ericsson and Charness, 1994; Ericsson, 2006; Klein, 1998; 2003), however this knowledge has not transferred into the strategy domain of literature. Instead, strategy researchers have focused on experience (e.g. Brouthers et al. 2000; and Dayan and Elbanna, 2011; Hitt and Tyler, 1991; Judge and Miller, 1991). However, experience and expertise are different; whilst experience is a requisite for the development of expertise, alone it is insufficient for superior decision-making (Ericsson, 2006; Kahneman and Klein, 2009). For expertise to develop the following conditions must be met (Ericsson et al. 2007):

1. Decision makers must have engaged in *deliberate practice*, which involves performing tasks that are beyond the current level of competency and comfort. This entails working on aspects that decision makers cannot currently perform proficiently. Thus it is sustained, effortful engagement in tasks where the decision-maker has not performed well previously. Years of exposure to challenging decisions in the work place are essential for true expertise to develop. Hodgkinson et al (2009, p.287) state that executives must "move outside their comfort zones to extend their strategic competence profiles, thereby equipping themselves with the skills to deal with less common problems";

2. Decision makers must obtain precise and exacting *feedback* on their performance. This allows errors to be identified and corrected in order to improve future performance, and;

3. Decision makers must have significant *experience*; 10 years (or 10,000 hours) is considered to be the minimum period of experience required for expertise to develop.

Therefore TMT expertise can be defined as the extent to which the TMT has extensive knowledge concerning the SDMP, which is derived from extensive experience, deliberate practice, and feedback.

Ericsson et al. (2007) highlight how the case study method taught by many Business Schools is an example of deliberate practice and feedback. Such methods permit students and executives to obtain immediate feedback on their decisions, and to attempt case study scenarios they may have never faced before (deliberate practice). The complex schemas of experts develop both through implicit learning and explicit learning (Dane, 2010; Dane and Pratt, 2007). Implicit learning occurs outside of the expert's consciousness and generates tacit knowledge. Explicit learning occurs through experience and training, and experts are aware of changes to their knowledge base.

There has been a significant increase in interest amongst social-psychologists in expertise since the mid 1980s (Ericsson, 2006). Recent evidence has dispelled theories of expertise as being related to innate talents and IQ (Ericsson et al. 2007; Ericsson and Charness, 1994), and recent research efforts have focussed on expert performance and the acquisition of expert performance. This perspective posits that experts are able to achieve a level of performance that exceeds what most others can at a domain specific task (Cianciolo et al. 2006). Contrary to popular belief, expertise does not derive from innate abilities; rather, it is the result of an individual acquiring complex skills and making physiological adaptations (Ericsson and Charness, 1994). No correlation has been found between IQ and expertise, and as such, experts are made rather than born (Bloom, 1985; Ericsson et al. 2007). Research within the social-psychology and behavioural neuroscience domains of literature have demonstrated that complex skills and physiological adaptations are developed through deliberate practice, exacting feedback, and extensive experience (Chassy and Gobet, 2011; Simonton, 2006).

Therefore expertise is a concept that has considerable utility for explaining SDMP characteristics and SDMP outcomes (through interactions with SDMP characteristics). However, no measure of TMT expertise exists. A reliable and valid measure of TMT expertise is essential in order to produce empirical evidence concerning the relationship between intuition and outcomes such as decision quality. This is because expertise is one of the two boundary conditions required in order for intuition to result in successful decisions (Kahneman and Klein, 2009). Nutt and Wilson (2010) highlight the relevance of related literatures, such as social-psychology, to shed insight upon the SDMP. Because experts process information differently (Nutt and Wilson, 2010), a failure to measure strategic decision-making expertise will severely hinder research efforts examining intuition and strategic decision making.

3.2.2.6 Other TMT Psychometric Variables

A number of other TMT variables have been subject to empirical research. However, these variables have only featured in a single SDMP study, thus making it difficult to draw meaningful conclusions from them. However, to ensure completeness of the literature reviewed in this chapter, a brief overview of the findings of each of these studies is detailed in this section.

There appears to be a positive relationship between TMT continuity and increases in the comprehensiveness of the SDMP (Fredrickson and Iaquinto 1989), however, Iaquinto and Fredrickson (1997) could not find support for their hypothesis that as TMT size increases the level of agreement about the comprehensiveness of the SDMP decreases. Also, Mitchell et al. (2011) found that CEO meta-cognition (reflection on one's own thinking) was negatively associated with erratic strategic decisions (inconsistent judgments which shape the direction of the firm). Furthermore, Clark and Maggitti (2012) found TMT potency (the perceptions of TMT members of their ability to perform tasks effectively) is positively related to SD speed. TMT potency also partially mediated the relationship between TMT experience, knowledge, interaction process, and SD speed (Clark and

Maggitti 2012). In addition, TMT polychronicity (tendency to switch attention between tasks) is positively related to SD speed and negatively related to SDMP comprehensiveness (Souitaris and Maestro 2010). SD speed and comprehensiveness were also found to partially mediate the relationship between TMT polychronicity and financial performance (Souitaris and Maestro 2010). Finally, Dayan et al. (2012) could not find a significant effect of interpersonal trust on political behaviour.

3.2.3 TMT Summary

Overall, there are a very limited number of empirical studies which have examined the effects of the TMT on the SDMP. Furthermore, no studies have been identified that examine the moderating effects of the TMT on the relationship between SDMP characteristics and SDMP outcomes. This gap is notable given the empirical evidence showing how other contextual variables interact with SDMP characteristics to influence SDMP outcomes (Elbanna and Child, 2007a).

Theory development has clearly been hindered by the fragmented nature of the studies reviewed here, and many have focused only on a single SDMP characteristic, often comprehensiveness or rationality. TMT tenure, education, demographic diversity, cognitive diversity, polychronicity and aggressive philosophy all significantly influence the degree of comprehensiveness. However, the effects of the CEO on SDMP characteristics are unclear. Whilst the effects of TMT demographic variables on multiple different SDMP characteristics have been examined (e.g. Papadakis et al. 1998), many of the psychometric variables such as cognitive diversity have not been subject to such systematic scrutiny. Hence, given the limited number of studies examining TMT variables such as cognitive diversity; future research may extend this line of enquiry by studying their effects on other important and frequently studied SDMP characteristics, such political behaviour, because strong disagreement concerning strategic issues is likely to result in executives forming coalitions and using power to promote their own perspectives.

It is also apparent that the SDMP domain can benefit from incorporating insights from related domains of literature, such as social-psychology (Hambrick and Mason, 1984; Hough and ogilvie, 2005). Expertise has so far been overlooked in SDMP research, despite it being acknowledged as vitally important for explaining decision-making processes and outcomes (Dane and Pratt, 2007; Kahneman and Klein, 2009; Hodgkinson et al. 2009; Salas et al. 2010).

This section has bought into question the utility of adopting an individual level of analysis. Papadakis and Barwise (2002) and Hambrick (2007) state that future research examining the influence of TMTs as opposed to CEOs is likely to yield more significant results. Furthermore, much of the research examining the effects of cognitive style on SDMP characteristics and outcomes is laboratory based and using an individual level of analysis. It remains unclear to what extent an individual's cognitive style affects the SDMP outside of the laboratory.

Also, the use of demographic variables as proxies for the underlying cognitive and behavioural traits of the TMT has attracted criticism and authors have questioned how reliably these demographic proxies do actually represent the traits that they purport to (Walsh, 1995; Miller et al. 1998; Priem et al. 1999; Hough and ogilvie, 2005). Direct measures of the TMT constructs of interest provide have greater validity and have more explanatory power than demographic variables (Priem et al. 1999).

This section has also identified studies that have omitted the mediating SDMP characteristics and specified direct effects of the TMT on SDMP outcomes. It is fundamentally important to measure actual mediating decision processes in order to fully understand the causal relationships between contextual variables, SDMP characteristics and SDMP outcomes. The studies reviewed which examine direct effects of the TMT on SDMP outcomes do not account for the mediating processes that convert TMT characteristics into SDMP outcomes (Hambrick, 2007). Because empirical

evidence has shown that decision process affects decision outcomes (Dean and Sharfman 1996), it is critically important that the actual decision process is modelled.

The final and perhaps most significant question that arises from this section is the extent to which the TMT influence SDMP characteristics relative to other contextual factors. Papadakis and Barwise (2002) showed that the TMT and CEO have less influence on SDMP characteristics relative to other contextual variables. Elbanna and Child (2007b) examined the relative influence of the external environment, firm characteristics, and SD specific characteristics on rationality, but omitted the TMT from their model. A major priority for future research should be to determine the relative importance of the TMT for explaining the SDMP compared to other contextual variables.

Table 3.2. A Summary of Empirical Research: TMT Demographic and Psychometric Variables

Study	Methodology		TMT Variables	Key Findings
	Sample	**Design**		
Henderson and Nutt (1980)	62 executives	Simulation	Cognitive style	Cognitive style is an important factor in the decision to adopt a capital expansion project and the assessment of risk
Miller et al. (1988)	77 firms with 500 or fewer employees	Field-based; cross-sectional	CEO need for achievement	CEO need for achievement positively influences rationality
Fredrickson and Iaquinto (1989)	45 firms in the paint and coatings and forest products industries	Field based; longitudinal; scenario-based interviews	Executive intra-firm tenure, executive team continuity	Changes in executive team tenure and continuity are positively associated with changes in the comprehensiveness of the SDMP
Nutt (1990)	79 top executives and 89 middle managers	Simulation	Cognitive style	Decision style is a key factor in explaining the likelihood of taking strategic action and the risk seen in this action. Decisions made by executives were more style dependent than those made by middle managers. Cognitive style determines the type of data and mode of data processing used
Hitt and Tyler (1991)	122 executives from manufacturing and service firms	Field based; cross-sectional; mail survey; scenario based policy capturing	TMT demographics (age, educational degree type, level of education, work experience, different functional experiences, executive's level in the organisation), cognitive complexity and risk propensity	Executive age, educational degree type, amount and type of work experience, and level moderate the relationship between the use of objective criteria and evaluations formed of acquisition candidates. Executive risk propensity, level of education and cognitive complexity did not have a significant moderating effect

Study	Methodology		TMT Variables	Key Findings
	Sample	**Design**		
Judge and Miller (1991)	Executives from 32 organisations in the biotechnology, hospital and textiles industries	Field study; cross-sectional; semi-structured interviews; archival data	TMT board experience	Board experience is positively related to decision speed in the biotechnology and textiles industries but negatively related to decision speed in the hospital industry
Nutt (1993)	152 executives	Simulation	Cognitive style	Executives with a flexible style were aggressive, with a high tolerance for ambiguity and uncertainty
Wally and Baum (1994)	151 CEOs	Field based; cross-sectional; mail survey; scenario based policy capturing	CEO cognitive ability, tolerance for risk, propensity to act, and use of intuition	CEO cognitive ability, use of intuition, tolerance for risk and propensity to act were associated positively with speedy decisions
Iaquinto and Fredrickson (1997)	65 firms in the paint and coatings and forest products industries	Field based; longitudinal; scenario-based interviews	TMT size and average organisational tenure	TMT size and average organisational tenure were not significantly related to agreement about the comprehensiveness of the SDMP
Sharfman and Dean (1997a)	57 strategic decisions in 25 companies	Field study; structured interviews; cross-sectional	TMT heterogeneity	TMT heterogeneity was not found to be significantly related to flexibility in the SDMP
Miller et al (1998)	106 chief administrators of Texas hospitals, 38 CEOs and 85 TMTs	Field based; cross-sectional; mail survey	TMT cognitive diversity	TMT cognitive diversity has a negative effect on SDMP comprehensiveness

Study	Methodology		TMT Variables	Key Findings
	Sample	**Design**		
Papadakis et al (1998)	70 strategic decisions from 38 Greek manufacturing firms	Field study; cross-sectional; semi-structured interviews; archival data	TMT level of education and aggressive philosophy. CEO risk propensity, education, and need for achievement	TMT and CEO variables influence financial reporting, formalisation, lateral communication, hierarchical decentralisation and only weakly, comprehensiveness in the SDMP. TMT and CEO variables do not influence politicisation or problem-solving dissension in the SDMP
Simons et al (1999)	57 TMTs from electronic component manufacturing firms	Field based; cross-sectional; mail survey	TMT demographic diversity and debate	Decision comprehensiveness partially mediated the effects of job related diversity on performance. TMT debate moderated (strengthened) the positive relationship between TMT diversity and comprehensiveness. Interactions between more job related forms of diversity and debate had stronger associations with comprehensiveness than less job related forms of diversity
Brouthers et al (2000)	Managers of 42 Dutch financial institutions	Field based; cross-sectional; mail survey	TMT age, educational level, functional work experience, executive level and risk propensity	Younger managers based SDs on entrepreneurial style more than older managers. Managers with accounting/finance experience were more likely to rely on organisation structure as a determinant of strategic aggressiveness than were managers with more general backgrounds. No effects were identified for manager education level, risk propensity or executive level
Papadakis and Barwise (2002)	70 strategic decisions from 38 Greek manufacturing companies	Field study; cross-sectional; semi-structured interviews; archival data	CEO tenure, risk propensity, need for achievement and education. TMT education and competitive aggressiveness	CEO demographic characteristics are positively related to hierarchical decentralisation. CEO need for achievement has a weak and negative association with hierarchical decentralisation. CEO risk propensity has no association with the SDMP. TMT education and competitive aggressiveness are positively related to comprehensiveness and lateral communication
Forbes (2005)	98 founder-managers (entrepreneurs) of internet start-ups	Field based; cross-sectional; on-line and mail survey; archival data	Founder-manager age and prior venture experience	Firms make faster SDs when managed by older founder-managers and by those with prior-venture experience

Study	Methodology		TMT Variables	Key Findings
	Sample	**Design**		
Goll and Rasheed (2005)	159 Manufacturing firms	Field based; cross-sectional; mail survey; archival data	TMT age, tenure, and education level	Average tenure and education level of the TMT is positively related to rationality, but average age is not
Hough and ogilvie (2005)	749 executives	Simulation	Cognitive style	iNtuiting/Thinking managers are more decisive and make higher quality SDs; Thinking managers and Extraverted managers are perceived to be most effective
Simsek et al. (2005)	402 small organisations	Field study, cross sectional, mail survey	Development of a behavioural integration measure and modelling of the antecedents of behavioural integration	The following TMT variables are significantly and positively associated with behavioural integration: CEO collectivist orientation and CEO tenure. The following variables are significantly and negatively associated with behavioural integration: TMT goal preference diversity, and TMT educational diversity.
Olson et al (2007a)	TMTs from 85 hospitals	Field-based; cross-sectional; mail survey	TMT cognitive diversity	Cognitive diversity has a positive relationship with task conflict, and competence-based trust strengthens this relationship. Task conflict mediates the relationship between cognitive diversity and SD understanding, commitment and quality
Olson et al (2007b)	252 Chinese executives	Field-based; cross sectional; survey	TMT cognitive diversity	Cognitive diversity has a negative relationship with SD commitment and quality, and the relationships are moderated by affect-based and cognition-based trust
Souitaris and Maestro (2010)	129 TMTs from new technology ventures	Field-based; cross-sectional; mail survey	TMT polychronicity	TMT polychronicity has a positive effect on SD speed and a negative effect on SDMP comprehensiveness. SD speed and comprehensiveness partially mediate the relationship between TMT polychronicity and financial performance
Dayan and Elbanna (2011)	155 Turkish firms	Field study, structured interviews	Team new product development experience	Past experience of new product development teams is positively related to intuition use. Environmental turbulence moderates this relationship, such that the effects of experience are stronger under high levels of environmental turbulence

Study	Methodology		TMT Variables	Key Findings
	Sample	**Design**		
Dayan and Di Benedetto (2011)	155 Turkish firms	Field study, multi-method, mail survey, personal interviews	Team new product development experience	Past experience moderates the inverted U-shaped relationship between intuition and new product creativity: teams with greater experience are more creative than those with less experience
Mitchell et al (2011)	64 CEOs of technology firms	Experiment; cross-sectional; mail survey	CEO meta-cognition	CEOs with greater metacognitive experience make less erratic strategic decisions
Clark and Maggitti (2012)	54 TMTs of high-technology companies	Field-based; cross-sectional; mail survey	TMT potency	TMT potency is positively related to SD speed. TMT potency partially mediates the relationship between TMT experience, knowledge, interaction process and SD speed
Dayan et al. (2012)	103 Turkish organisations	Field study, cross-sectional, mail survey	Interpersonal trust, functional and demographic diversity	Greater levels of functional diversity led to political behaviour. However, demographic diversity and interpersonal trust had no effect on political behaviour.

3.3 The Strategic Decision-Specific Characteristics Perspective

SD specific characteristics are the labels that decision makers attribute to an SD based on their perceptions of stimuli (Papadakis et al. 1998). Prior empirical research has shown that the way decision-makers interpret the SD during the early stages of decision-making significantly influences the way in which the organisation subsequently responds (Elbanna and Child, 2007b; Hickson et al. 1986; Papadakis et al. 1998). The SD specific characteristics featured most frequently in the SDMP literature are reviewed in this section and include importance, uncertainty, motive, pressure, familiarity and decision matter (see table 3.3).

3.3.1 Importance

An SD is important if it is perceived as having a significant magnitude of impact on an organisation's operations and performance (Papadakis et al. 1998). Evidence suggests that SD importance directly influences the characteristics of the SDMP including comprehensiveness, hierarchical decentralisation and use of financial reporting, although overall the results of empirical research are far from coherent.

Papadakis et al. (1998) found that comprehensiveness, use of financial reporting, hierarchical decentralisation, and lateral communication were all positively related to the magnitude of impact of the SD. However, Dean and Sharfman (1993) were unable to find a relationship between SD importance and rationality (collection and analysis of information). Similarly, Elbanna and Child (2007a) were unable to find support for their hypothesis that SD importance moderates (strengthens) the positive relationship between rationality (using a similar operationalisation to Dean and Sharfman 1993a; 1996) and SD effectiveness, defined as the extent to which the decision achieves its objectives (Dean and Sharfman 1996). Furthermore, Elbanna and Child (2007a) did not find support for their hypothesis that SD importance moderates (weakens) the negative relationships between intuition and political behaviour (use of power, negotiation, concern with personal goals) and SD effectiveness. However, Dayan and Elbanna (2011) did find that decision importance was negatively related to the

use of intuition, and Dayan et al. (2012) found that importance resulted in greater political behaviour in new product development teams.

Finally, Nutt (2000; 2008) highlighted that the success of an SD improves if it is perceived to be of high importance, that discovery SDMPs (characterised by logical and political rationality) were more successful for important SDs and that emergent opportunity SDMPs (a process where an idea emerged and search was terminated) were more successful for low importance SDs.

3.3.2 Uncertainty

Uncertain SDs lack clarity over the actions to be taken and the information required for the decision to be made (Sonenshein 2007), and SD uncertainty has been found to directly affect certain characteristics of the SDMP including rationality, flexibility and politicisation, as well as influencing the relationship between rationality and SD effectiveness. Uncertain SDs are negatively associated with rationality in the SDMP because SD uncertainty is "related to factors that simply cannot be known" (Dean and Sharfman 1993a, p.593). Sharfman and Dean (1997a) also determined that SD uncertainty is positively related to flexibility in the SDMP. SD uncertainty has also been found to have a negative effect on rule formalisation in the SDMP (Papadakis et al. 1998) as strategic decision makers are unable to find consensus over what information is relevant and what actions to take. Papadakis et al. (1998) also determined that uncertainty had a positive effect on politicisation (coalitions, negotiation, resistance) and problem solving dissension (disagreement) in the SDMP. However, Elbanna and Child (2007a) were unable to find any empirical evidence for their hypotheses that SD uncertainty moderates (strengthens) the negative relationships between political behaviour and intuition and SD effectiveness. The authors did however find that the positive relationship between rationality and SD effectiveness was weaker for low uncertainty decisions than for high uncertainty decisions. Finally, whilst Dayan and Elbanna (2011) found that decision uncertainty had no significant effect on the use of intuition in new product development projects, and Dayan et al.

(2012) found no significant effects on political behaviour; decision uncertainty was been found to be positively associated with the use of intuition in the SDMP (Elbanna et al. 2012).

3.3.3 Motive

SD motive refers to whether the SD is framed as a threat or an opportunity, and influences the characteristics of the SDMP, as well as moderating the relationships between rationality and political behaviour, and SD effectiveness. Papadakis et al. (1998) found that threat was positively related to hierarchical decentralisation in the SDMP, and Fredrickson's (1985) laboratory study identified that MBA students' facing a problem were more comprehensive than when faced with an opportunity, whereas there were no differences in the executive sample. However, Ashmos et al. (1998) could not find support for their hypothesis that participation in the SDMP would be greater for SDs viewed as opportunities than threats. Finally, Elbanna and Child (2007a) found no evidence that decision motive moderates (weakens) the negative relationship between intuition and strategic decision effectiveness, but found that motive moderates the relationships between rationality and political behaviour, and SD effectiveness. The positive relationship between rationality and SD effectiveness was stronger for SDs perceived as crises (extreme threat) than for opportunities, and the negative relationship between political behaviour and strategic decision effectiveness was weaker for SDs perceived as crises than opportunities.

Whilst Dayan and Elbanna (2011) found that new product development teams relied more on intuition when the decision process is motivated by an opportunity, Elbanna et al. (2012) were unable to find empirical evidence to support hypothesised effects of decision motive significantly influencing the use of intuition in the SDMP. Finally, when the decision is motivated by a threat or crisis, political behaviour is reduced in new product development teams (Dayan et al. 2012).

3.3.4 Pressure

The extent to which there is extreme time pressure to make an immediate decision is considered to affect the characteristics of the SDMP, although there is only limited empirical evidence. Papadakis et al. (1998) identified that SD pressure is negatively related to hierarchical decentralisation and positively related to problem solving dissension in the SDMP, and Nutt (2000) established that decision urgency had only a modest effect on decision success, but that discovery SDMPs were successful in high urgency decisions (Nutt 2008).

3.3.5 Familiarity

Familiarity refers to whether a particular type of SD frequently occurs within an organisation and whether it forms part of another SD. However, in the only empirical study to examine it, Papadakis et al. (1998) were unable to detect any significant influence on any of the characteristics of the SDMP.

3.3.6 Decision Matter

"The matter for decision matters most" (Hickson et al. 1986, p.248). One of the major findings of the Bradford Studies (Hickson et al. 2001) is that the matter being decided upon had the most influence on the characteristics of the SDMP. The authors identified three different types of decision matter; vortex matters, tractable matters and familiar matters, which are each characterised by different levels of complexity and cleavage (politicality emanating from the division of labour) (Astley et al. 1982). Vortex matters have diverse involvement, are serious, non-precursive, contentious and externally influenced. Tractable matters have less diverse involvement, are less serious, have diffuse consequences, are rare, precursive, non-contentious and are evenly influenced. Familiar matters are non-novel, have limited consequences, are non-precursive and are both unevenly and internally influenced (Cray et al. 1991).

Vortex matters were found to result in a sporadic SDMP. Sporadic SDMPs are subject to disruption and delay, information quality is variable and from a wide range of sources and there is scope for negotiation (Cray et al. 1988). Tractable matters were found to result in a fluid SDMP. Fluid SDMPs are "steadily paced, formally channelled and speedy" (Hickson et al. 1986, p.120). Finally, Familiar matters were found to result in a constricted SDMP. Constricted SDMPs revolve around a central decision-maker with authority (e.g. the CEO) who obtains readily available information and advice from departmental and external experts, requiring no great effort to acquire it. Constricted SDMPs have minimal involvement of committees and there is little scope for negotiation (Cray et al. 1988).

Hickson et al. (1986) also found that certain decision topics were more or less commonly associated with either sporadic, fluid or constricted SDMPs. For example, organisation wide corporate planning resulted in a either fluid or constricted process because "everyone has been through the exercise before and knows the score. Rules, if only rules of thumb, have been evolved to reduce the complexity of the problem, which is one that is expressed in figures and does not have the leap into the unknown feel of a re-organisation, for example" (Hickson et al. 1986, p.185). It should be noted that Dean and Sharfman (1993a) found that contention of objectives, where the decision matter provokes a divergence of interests amongst stakeholders, did not significantly influence SDMP rationality.

3.3.7 SD specific characteristics summary

SD specific characteristics are a significant influence on SDMP characteristics, relative to other contextual variables (Hickson et al. 1986; Papadakis et al. 1998; Elbanna and Child, 2007b). Despite their evident importance as antecedents, only one empirical study has addressed their moderating influence on the relationship between SD specific characteristics and outcomes.

Many of the SD specific characteristics studied have only featured in one or two empirical studies, and as such it is unclear the extent to which the findings of the studies reviewed here are generalisable. There is also a need for the careful definition and operationalisation of SD specific characteristics and SDMP characteristics, because for example, whilst the magnitude of impact of an SD is positively related to comprehensiveness (Papadakis et al. 1998) SD importance has no relationship with rationality (Dean and Sharfman, 1993a). Additionally, decision familiarity has only featured in one empirical study, and whilst it produced largely non-significant results, it is likely to be an important factor in determining the success of intuitive SDMPs because intuition functions by detecting cues in a decision scenario and matching them to patterns stored in their schemas. Hence, if a decision is familiar, the situation is more likely to trigger a reliable intuitive response because decision-makers will accurately recognise and match the cues presented to them to the patterns stored in their schemas, if made by a TMT with sufficient levels of expertise (Ericsson et al. 2007). In unfamiliar decision scenarios where TMTs are not familiar with the particular decision, having faced similar decision only infrequently or never before, intuition is much more likely to be biased, resulting in ineffective choices. It is likely that paying closer attention to the familiarity of the decision can help to reconcile some of the conflicting findings of existing empirical work on intuition (e.g. Khatri and Ng, 2000; Elbanna and Child, 2007a).

Finally, in reviewing the studies in this section it was apparent that many of the SD specific characteristics used in the studies suffered from low reliabilities and several studies have reported Cronbach alphas of between 0.54 and 0.63 (e.g. Dean and Sharfman, 1993a; Papadakis et al. 1998; Elbanna and Child, 2007a). Therefore, research focusing on SD specific characteristics is likely to benefit from measure development work. Furthermore, replication work would contribute to understanding the potential generalisability of existing empirical findings. Finally, given the significant interactions in Elbanna and Child's (2007a) study, further research examining the moderating effects of SD specific characteristics is warranted.

Table 3.3. A Summary of Empirical Research: SD Specific Characteristics

Study	Methodology		Strategic Decision Specific Variables	Findings
	Sample	**Design**		
Fredrickson (1985)	321 MBA students and 116 executives	Laboratory study; cross-sectional; scenario-based interviews	Decision motive (problems and opportunities)	MBA students' decision processes were affected by the decision motive; but executives' were not. MBA students were more comprehensive when faced with a problem
Hickson et al. (1986)	150 strategic decisions in 30 organisations	Case studies; longitudinal; multi-method	Vortex, tractable and familiar decision matters	Vortex matters result in sporadic processes; tractable matters result in fluid processes and familiar matters result in constricted processes
Dean and Sharfman (1993a)	57 strategic decisions in 24 companies	Field study; structured interviews; cross-sectional	Importance, contention of objectives and uncertainty	Uncertainty was negatively related to rationality in the strategic decision-making process. Contention of objectives and importance were not significantly related to rationality
Sharfman and Dean (1997a)	57 strategic decisions in 25 companies	Field study; structured interviews; cross-sectional	Uncertainty	Uncertainty was positively associated with flexibility in the SDMP
Ashmos et al. (1998)	Executives from 52 organisations	Field study; cross-sectional; mail survey	Opportunity/Threat	The hypothesis that participation in the SDMP would be greater for opportunities than for threats was not supported
Papadakis et al (1998)	70 strategic decisions from 38 Greek manufacturing firms	Field study; cross-sectional; semi-structured interviews; archival data	Magnitude of impact, threat/crisis, uncertainty, pressure, familiarity, planned vs. ad-hoc	Strategic decision specific characteristics significantly influence the characteristics of the SDMP, more than environmental, organisational and managerial contextual variables
Nutt (2000)	317 strategic decisions	Field study; cross-sectional; semi-structured interviews	Importance and urgency	Success improves when SDs are perceived as high importance. SD urgency had a modest impact on success

Study	Methodology		Strategic Decision Specific Variables	Findings
	Sample	**Design**		
Elbanna and Child (2007a)	Executives from 169 Egyptian manufacturing companies	Field study; cross-sectional; drop-off survey	Decision importance, decision uncertainty, and decision motive	Decision motive (crisis) moderated (strengthened) the positive relationship between rationality and SD effectiveness and moderated (strengthened) the negative relationship between political behaviour and SD effectiveness. Motive did not moderate (weaken) the negative relationship between intuition and SD effectiveness. The positive relationship between rationality and SD effectiveness was found to be weaker for low-uncertainty SDs than for high-uncertainty SDs. Uncertainty did not moderate (strengthen) the negative relationships between intuition and political behaviour and SD effectiveness. Moderating effects of decision importance were not supported
Elbanna and Child (2007b)	As that of Elbanna and Child (2007a)	As that of Elbanna and Child (2007a)	As that of Elbanna and Child (2007a)	Strategic decision specific characteristics have a significant influence on the rationality of the strategic decision making process. Strategic decision specific characteristics explain more variance in rationality than the external environment but less than firm characteristics
Nutt (2008)	202 strategic decisions	Field study; cross-sectional; semi-structured interviews	Importance and urgency	Discovery processes were successful in high urgency SDs and for high importance SDs. Emergent opportunity processes were more successful for low importance SDs
Dayan and Elbanna (2011)	155 Turkish firms	Field study, structured interviews	Importance, uncertainty and motive	Decision importance is negatively related to intuition use, decisions motivated by opportunities are significantly related to intuition use, whereas uncertainty has no significant effect on intuition use
Dayan et al. 2012	103 Turkish organisations	Field study, cross-sectional, mail survey	Importance, uncertainty, and motive	Importance and threat/crisis leads to increased political behaviour whereas uncertainty has no significant effects
Elbanna et al. (2012)	As that of Elbanna and Child (2007a)	As that of Elbanna and Child (2007a)	Decision uncertainty and motive	Decision uncertainty was positively associated with intuition use but motive was not

3.4 The Environmental Determinism Perspective

The environmental determinism perspective views the external environment as the most influential determinant of the SDMP (Aldrich 1979; Hannan and Freeman 1977). The external environment is defined as the "relevant physical and social factors outside the organisational boundaries that are taken into consideration during organisational decision making" (Liao et al. 2008, p.16). The dimensions of the external environment reviewed in this section include environmental dynamism, velocity, hostility-munificence, instability, heterogeneity, and uncertainty (see Table 3.4).

3.4.1 Environmental Dynamism

Environmental dynamism is defined as "highly unpredictable and unstable rate of change and high levels of uncertainty about the state of the context, the means-ends relationships, and/or the outcomes of the actions" (Mitchell et al. 2011, p.687-688). Environmental dynamism has been found to affect the outcomes of the SDMP, such as speed (Baum and Wally 2003), SD quality (Hough and White 2003), firm performance (Priem et al. 1995) and whether the SD is erratic (Mitchell et al. 2011). The direct effects of environmental dynamism on the characteristics of the SDMP remain less well understood.

Mitchell et al. (2011) discovered that, contrary to their expectation, environmental dynamism resulted in managers making fewer erratic SDs. The authors suggest that experience may enable managers to focus on only the salient cues in dynamic environments. A similarly unexpected finding emerged from Hough and White's (2003) study of environmental dynamism and SD rationality; the authors found that SDMP rationality (availability and pervasiveness of information used) in dynamic environments had no effect on SD quality. The findings of Hough and White (2003) do however, contradict those of Priem et al. (1995), who's results show a positive relationship between SDMP rationality (scanning, analysis and planning) and firm performance in dynamic environments and no relationship in stable environments. Baum and Wally (2003) identified that environmental dynamism

is positively related to SD speed, and that SD speed mediates the relationship between environmental dynamism and organisational performance. Papadakis et al. (1998) however, found no effects of environmental dynamism on any of the SDMP characteristics.

Environmental turbulence is similar to dynamism in that it refers to fast paced changes in customer demand and technology, and has been found to moderate the influence of intuition on the success of a new product and its speed to market, such that the higher the level of turbulence the stronger the positive influence of intuition (Dayan and Elbanna, 2011). Furthermore, environmental turbulence has a direct and positive influence on the use of intuition (Dayan and Di Benedetto, 2011). However, environmental turbulence does not significantly influence the positive effects of political behaviour on the speed to market of new product launches (Dayan et al. 2012).

3.4.2 Environmental Velocity

Bourgeois and Eisenhardt (1988, p.816) define a high velocity environment as one "in which there is rapid and discontinuous change in demand, competitors, technology and/or regulation, such that information is often inaccurate, unavailable or obsolete." While some scholars state that environmental velocity is similar to environmental dynamism (Baum and Wally 2003), others have stated that it differs because it "also involves discontinuous, qualitative changes" (Judge and Miller, 1991, p.452). Studies in the SDMP domain of literature have highlighted the importance of SD speed and rationality in high velocity environments.

In Eisenhardt's (1989) seminal study of SDMPs in the high velocity microcomputer industry, the author found that strategic decision makers coped with high velocity environments by utilising real time information and simultaneously considering multiple SD alternatives (a characteristic of SDMP comprehensiveness) whilst making fast SDs. In a similar vein, Judge and Miller (1991) found SD

speed to be positively related to organisational performance in high velocity environments. Bourgeois and Eisenhardt's (1988) study of four cases in the micro-computer industry identified that in high velocity environments, effective firms use rational SDMPs (analytic processes, searching beyond a single alternative and using computational analysis), and that in such environments the greater the political behaviour, the poorer the performance of the firm.

3.4.3 Environmental Hostility-Munificence

Environmental munificence is "the extent to which an environment can provide sufficient resources for the firms present in it" (Sharfman and Dean 1991, p.685). Empirical evidence, discussed below, suggests that environmental munificence is related to SD speed and also moderates the relationship between rationality and SD effectiveness, although there are contradictory findings regarding the precise direction of this effect.

Baum and Wally (2003) found that environmental munificence was positively related to SD speed, and that SD speed mediates the relationship between environmental munificence and performance. However, contrary to their expectations, Goll and Rasheed (2005) determined that the relationship between rationality and firm performance was strong and positive in high-munificence environments, but negative and non-significant in low-munificence environments. Furthermore, Goll and Rasheed (1997) found that not only did munificence and dynamism moderate the relationship between rationality and firm performance, but that rationality was more strongly associated with performance in environments high in both munificence and dynamism than in other environments. However, contrary to these findings, Elbanna and Child's (2007a) study shows that the positive relationship between rationality and SD effectiveness is stronger in low-munificence environments than for high-munificence environments.

Hostile environments are ones which are threatening and dangerous (Miller and Friesen 1983; Mitchell et al. 2011). Empirical studies have shown that environmental hostility is negatively related to rationality and flexibility in the SDMP, and causes managers to make more erratic SDs (Dean and Sharfman, 1993a; Sharfman and Dean, 1997; Mitchell et al. 2011). However, when environmental hostility interacts with environmental dynamism, managers make fewer erratic SDs, because in such environments managers utilise their experience and "tune out distractions" (Mitchell et al. 2011, p.696). Dean and Sharfman (1993a) unexpectedly discovered that under conditions of competitive threat, the rationality of the SDMP was reduced. However, Papadakis et al. (1998) found no relationship between environmental hostility and comprehensiveness, financial reporting, rule formalisation, hierarchical decentralisation or political behaviour in the SDMP. Also, Sharfman and Dean (1997a) identified competitive threat as being negatively related to flexibility in the SDMP. Finally, Elbanna et al. (2012) found that environmental hostility moderates the relationship between intuition and decision disturbance, such that the greater the level of environmental hostility, the greater the positive effects of intuition on decision disturbance.

3.4.4 Environmental Instability, Heterogeneity, and Uncertainty

Other dimensions of the external environment examined in the SDMP literature include instability, heterogeneity, and uncertainty. Environmental instability is defined as "the extent to which market demand and technology are rapidly changing in a given industry" (Dean and Sharfman 1996, p.376). Empirical evidence points to a negative relationship between SDMP comprehensiveness and organisational performance in unstable environments but a positive relationship in stable environments, and that intuitive synthesis in the SDMP is positively related to organisational performance in such environments. For example, Dean and Sharfman (1996) identified that the relationship between rationality and SD effectiveness was *not* stronger under conditions of instability, and Fredrickson and Mitchell (1984) found a consistently negative relationship between comprehensive SDMPs and organisational performance under conditions of environmental instability.

Also, Fredrickson (1984) identified a positive relationship between comprehensive SDMPs and organisational performance in a stable environment. Fredrickson and Iaquinto (1989) corroborated the findings of Fredrickson (1984) and Fredrickson and Mitchell (1984) by providing empirical evidence of a positive relationship between comprehensiveness and performance in a stable environment, and a negative relationship in an unstable environment. Finally, Khatri and Ng (2000) identified that intuitive synthesis (reliance on judgment, experience and gut-feeling) in the SDMP had a positive relationship with organisational performance under conditions of environmental instability, but had a negative relationship with organisational performance in stable environments.

Empirical evidence concerning the effects of environmental uncertainty is largely equivocal, with Elbanna and Child (2007a) finding that environmental uncertainty (changes in demand, competitors, products and government policy) did not moderate the relationships between SDMP characteristics and SD effectiveness, and Elbanna et al. (2012) unable to detect any moderating effects of environmental uncertainty on the relationship between intuition on decision disturbance. Furthermore, environmental uncertainty appears to have less significant direct effects on SDMP characteristics relative to other contextual variables (Elbanna and Child, 2007b). However, Atuahene-Gima and Li (2004) studied specific dimensions of environmental uncertainty and determined that the effects of SDMP comprehensiveness on new product performance were negatively moderated by technology uncertainty and positively moderated by demand uncertainty; whereas the relationship between SDMP comprehensiveness and new product quality was positively moderated by demand uncertainty but was unaffected by technology uncertainty.

Finally, Papadakis et al. (1998) studied environmental heterogeneity, which captures the complexity inherent in the organisation's external environment, requiring variation in production and in marketing orientation (Miller and Friesen, 1983). Environmental heterogeneity was the only dimension of the external environment found to significantly any of the SDMP characteristics by

Papadakis et al. (1998), who showed that it negatively impacted on problem solving dissension. Hence in complex external environments decision makers appear to disagree less and focus more on accomplishing the decision at hand.

Overall, studies examining environmental instability have produced significant findings concerning its moderating effects on the relationships between comprehensiveness, intuition, and organisational performance. However, the implications of environmental uncertainty for the SDMP are far less clear, perhaps because a focus on the individual dimensions of environmental uncertainty is required to understand such a complex phenomenon. Finally, environmental heterogeneity appears to have significant implications for problem solving dissension, but not for any other SDMP characteristics.

3.4.5 External environment summary

Theory development has been hindered by the absence of a single approach to conceptualising and measuring the external environment (Sharfman and Dean 1991). Studies have used environmental velocity, instability and dynamism to capture the extent to which the external environment is subject to rapid and unpredictable change, which have produced conflicting findings concerning the effects of comprehensiveness on performance (e.g. Bourgeois and Eisenhardt, 1988; Fredrickson and Mitchell, 1984). Similarly, studies examining the implications of rationality in munificent environments have produced contradictory results (e.g. Goll and Rasheed, 2005; Elbanna and Child, 2007a). Also, relative to other contextual variables, the external environment appears to have limited direct effects on SDMP characteristics (Papadakis et al. 1998; Elbanna and Child, 2007b), and its influence seems primarily to be a moderating one; influencing the relationship between SDMP characteristics and outcomes. In part, the contradictory findings of the studies reviewed in this section may be caused by some studies adopting an organisational level of analysis and others focusing on the decision level. To complicate matters further, there are many differences in the SDMP characteristics used, with

some examining rationality and others comprehensiveness, not to mention the variance in how these constructs are operationalised.

There is therefore a need for future research to reconcile the conflicting findings of the Eisenhardt and Fredrickson studies, and of Elbanna and Child (2007a) and Goll and Rasheed (1997). Research should also control for SD speed when examining the effects of SDMP characteristics under different environmental conditions, owing to its significant implications for SDMP outcomes (Eisenhardt, 1989; Judge and Miller, 1991).

Table 3.4. A Summary of Empirical Research: The External Environment

Study	Methodology		External Environment Variables	Findings
	Sample	**Design**		
Fredrickson and Mitchell (1984)	109 executives from 27 firms in an unstable environment	Experiment; cross sectional; scenario based interviews	Unstable environment	Comprehensiveness is negatively related to performance in an unstable environment
Fredrickson (1984)	152 executives from 38 firms in a stable environment	As that of Fredrickson and Mitchell (1984)	Stable environment	Comprehensiveness is positively associated with performance in a stable environment
Bourgeois and Eisenhardt (1988)	4 microcomputer firms	Multiple case study; longitudinal; multi-method	High velocity environment	In high velocity environments effective firms use rational SDMPs and the greater the political behaviour among the TMT, the poorer the performance of the firm
Fredrickson and Iaquinto (1989)	159 executives in stable and unstable environments	Experiment; longitudinal	Unstable and stable environment	Comprehensiveness is negatively related to performance in an unstable environment, and positively related to performance in a stable environment
Eisenhardt (1989)	8 microcomputer firms	Multiple case study; longitudinal; multi-method	High-velocity environment	In high velocity environments executives make fast strategic decisions using more information, and develop more alternatives. Fast decisions based on this pattern of behaviours lead to superior performance in high velocity environments
Judge and Miller (1991)	Executives from 32 organisations in the biotechnology, hospital and textiles industries	Field study; cross-sectional; semi-structured interviews; archival data	High-velocity environment	Decision speed was associated with high performance in high-velocity environments, and the strength of this relationship increases as environmental velocity increases

Study	Methodology		External Environment Variables	Findings
	Sample	**Design**		
Dean and Sharfman (1993a)	57 strategic decisions in 24 companies	Field study; cross-sectional; structured interviews	Competitive threat	Competitive threat is negatively related to rationality
Priem et al. (1995)	101 manufacturing firms	Field study; cross-sectional; mail survey	Environmental Dynamism	A positive relationship between SDMP rationality and firm performance in a dynamic environment, but no relationship between SDMP rationality and firm performance for firms facing stable environments
Dean and Sharfman (1996)	52 strategic decisions in 24 companies	Field study; longitudinal; structured interviews	Environmental instability and favourability	Environmental instability did not moderate the relationship between rationality and decision effectiveness. Environmental favourability had a greater influence on decision effectiveness in unstable than in stable environments
Iaquinto and Fredrickson (1997)	65 firms in the paint and coatings and forest products industries	Field based; longitudinal; scenario-based interviews	Unstable and stable environment	Firms in an industry with an unstable environment exhibited more agreement about the comprehensiveness of the SDMP than did their counterparts in a stable industry
Sharfman and Dean (1997a)	57 strategic decisions in 25 companies	Field study; structured interviews; cross-sectional	Competitive threat	Competitive threat was negatively related to flexibility in the SDMP
Goll and Rasheed (1997)	62 large manufacturing firms	Field study; cross-sectional; mail survey	Environmental munificence and dynamism	Environmental munificence and dynamism moderate the relationship between rationality and performance. Rationality is more strongly associated with performance in environments high in munificence and dynamism than in other environments
Papadakis et al (1998)	70 strategic decisions from 38 Greek manufacturing firms	Field study; cross-sectional; semi-structured interviews; archival data	Environmental heterogeneity, dynamism and hostility	Environmental heterogeneity had a negative effect on problem-solving dissension. No other significant effects of the external environment on any of the other SDMP characteristics were identified
Khatri and Ng (2000)	221 companies	Field study; cross sectional; mail survey	Environmental instability	A positive relationship exists between intuitive synthesis and organisational performance in an unstable environment and a negative relationship exists in a stable environment

Study	Methodology		External Environment Variables	Findings
	Sample	**Design**		
Baum and Wally (2003)	318 CEOs	Experiment; longitudinal; mail survey	Environmental dynamism and munificence	Environmental dynamism was positively related to SD speed. Environmental munificence was positively related to SD speed. SD speed mediates the relationship between environmental dynamism and munificence and firm performance
Hough and White (2003)	400 decisions from 54 executive teams	Simulation	Environmental dynamism	The hypothesis that there is a positive relationship between rationality and decision quality in dynamic environments, and a non-significant relationship otherwise was not supported
Atuahene-Gima and Li (2004)	373 Chinese technology firms	Field study; cross-sectional; survey	Demand uncertainty and technology uncertainty	The relationship between SDMP comprehensiveness and new product performance was negatively moderated by technology uncertainty but positively moderated by demand uncertainty. The effect of SDMP comprehensiveness on new product quality was positively moderated by demand uncertainty but unaffected by technology uncertainty
Goll and Rasheed (2005)	159 manufacturing companies	Field study; cross sectional; mail survey	Environmental munificence	The relationship between rationality and performance was strong and positive in high-munificence environments but negative and not significant in low-munificence environments
Elbanna and Child (2007a)	Executives from 169 Egyptian manufacturing companies	Field study; cross-sectional; drop-off survey	Environmental uncertainty, munificence-hostility	The positive relationship between rationality and SD effectiveness was stronger in low-munificence environments than high-munificence environments. Munificence did not moderate the relationship between intuition and political behaviour and SD effectiveness. Environmental uncertainty did not moderate the relationship between SDMP characteristics and SD effectiveness
Elbanna and Child (2007b)	As that of Elbanna and Child (2007a)	As that of Elbanna and Child (2007a)	As that of Elbanna and Child (2007a)	The external environment has a significant influence on the rationality of the strategic decision making process, although the relative importance of the external environment is less than SD specific and firm characteristics
Mitchell et al (2011)	64 CEOs of technology firms	Experiment; cross-sectional; mail survey	Environmental dynamism and hostility	In dynamic environments managers make less erratic strategic decisions; in hostile environments managers make more erratic strategic decisions. Environmental dynamism and hostility interact such that managers make less erratic strategic decisions

Study	Methodology		External Environment Variables	Findings
	Sample	**Design**		
Dayan and Di Benedetto (2011)	155 Turkish firms	Field study, multi-method, mail survey, personal interviews	New product development team intuition and its ability to generate creative new products	Positive and linear relationship between environmental turbulence and intuition
Dayan and Elbanna (2011)	155 Turkish firms	Field study, structured interviews	Environmental Turbulence	The higher the level of turbulence, the greater the impact of intuition on the success of a new product and its speed to market
Dayan et al. 2012	103 Turkish organisations	Field study, cross-sectional, mail survey	Antecedents and outcomes of political behaviour in new product development teams	Environmental turbulence does not moderate the effects of political behaviour on speed to market
Elbanna et al. (2012)	As that of Elbanna and Child (2007a)	As that of Elbanna and Child (2007a)	As that of Elbanna and Child (2007a)	Environmental hostility moderates the effects of intuition on decision disturbance such that the effects are stronger under high levels of uncertainty. Environmental uncertainty does not moderate the relationship between intuition and decision disturbance.

3.5 The Firm Characteristics Perspective

The firm characteristics perspective posits that the SDMP is significantly influenced by the characteristics of the firm in which it takes place—hence, firm characteristics such as structure, performance, external control, and size are considered to shape the characteristics of the SDMP and also influence the relationship between SDMP characteristics and outcomes. Therefore, this section reviews the literature that has examined the effects of frequently studied firm characteristics including organisational structure, size, performance, external control, corporate control, planning formality, and slack resources on the SDMP (see Table 3.5).

3.5.1 Organisational Structure

Organisational structure is defined as "the enduring allocation of work roles and administrative mechanisms that allow organisations to conduct, coordinate, and control their activities" (Jackson and Morgan 1982, p.81). Organisational structure has been found to influence SD speed, as well as political behaviour and rationality in the SDMP.

The degree of centralisation and formalisation of an organisation's structure has been the subject of empirical research in the SDMP literature. Wally and Baum (1994) and Baum and Wally (2003) found that when strategic decision-making authority is centralised in the hands of the TMT it increases SD speed. Baum and Wally (2003) also discovered that the decentralisation of operations management, where front line employees were given greater operational decision-making authority, was positively related to SD speed.

Whilst Baum and Wally (2003) suggest that centralised organisational structures minimise political behaviour, thus speeding up the SDMP; Bourgeois and Eisenhardt (1988)[1] and Eisenhardt and Bourgeois (1988) identified that when power is centralised in the hands of the CEO, it results in low levels of organisational performance and increased political behaviour in the SDMP. Furthermore, Eisenhardt (1989) found no relationship between power centralisation and SDMP speed.

Organisations also vary in the extent to which they have formalised processes and procedures for making SDs; however the results of empirical studies are somewhat confounding. Formalisation of organisational routines and informalisation non-routines (unusual problems and non-routine tasks) were found to be positively related to SD speed, by increasing information flows and allowing for intuitive SDMPs (Baum and Wally 2003). However, Wally and Baum (1994) identified that formalisation of strategic decision-making structures was negatively associated with the pace at which executives evaluated acquisition candidates.

Confounding results arose in Miller (1987) and Miller et al's (1988) studies. Miller (1987) determined that formalisation and integration (e.g. task forces and committees) are positively related to SDMP rationality (analysis of decisions, planning, systematic scanning of environments and explicitness of strategies), interaction, and proactiveness. However, Miller et al. (1988) found that formalisation and integration did *not* influence the rationality of the SDMP, but that rationality influenced formalisation and integration. Miller (1987) also found non-significant effects of structural complexity on the SDMP, and that decentralisation was positively related to interaction and proactiveness.

[1] Power decentralisation is a characteristic of the TMT because it specifically captures the extent to which power is centralised in the hands of the CEO or distributed amongst TMT members, and as such it does not measure the decision-making power held by employees at any other level of the organisation. However, it is included in the firm characteristics section of this chapter to enable comparisons to be drawn with studies examining centralisation at an organisational level.

Furthermore, Ashmos et al. (1998) identified that participation of internal stakeholder groups in the SDMP is greater in organisations that are less rule orientated than organisations that are more rule orientated. Finally Covin et al. (2001) determined that in high-technology environments, intuitive-experience based SDMPS were more positively related to performance among firms with organic than mechanistic structures. Also, Covin et al. (2001) found that in low-tech industries, technocratic SDMPs (using systematic and quantitative analysis) are more positively related to performance among firms with organic than mechanistic structures.

3.5.2 Organisation Size

The SDMP literature generally contends that large organisations are associated with rational SDMPs, whereas small organisations rely more on intuition in the SDMP (Elbanna and Child 2007b; Elbanna et al. 2012; Miller et al. 1998; Papadakis et al. 1998). Consistent with this, Fredrickson and Iaquinto (1989) and Papadakis et al. (1998) both report that as organisations increase in size so too does the comprehensiveness of their SDMPs. Furthermore, small organisations are considered to be less susceptible to political behaviour owing to their centralised organisation structures, and Iaquinto and Fredrickson (1997) reported a negative relationship between firm size and TMT agreement about the comprehensiveness of the SDMP. However, Papadakis et al. (1998) found that organisation size did not have any association with political behaviour. It should also be noted that Dean and Sharfman (1993a) were unable to find a relationship between size and rationality, and Hickson et al. (1986) were able only to identify small differences in SDMP characteristics according to firm size, with small firms making speedier SDs (Miller 2010). It also appears as though as when firms grow, behavioural integration diminishes (Simsek et al. 2005). Finally, Elbanna and Child (2007a) were unable to detect any moderating effects of firm size on the relationship between SDMP characteristics and SD effectiveness.

3.5.3 Performance

How organisations perform, both financially and non-financially relative to others in their industry has implications for the characteristics of the SDMP, as well as for the relationship between rationality, political behaviour, intuition and SD effectiveness. Papadakis et al. (1998) found that performance (return on assets) was positively associated with comprehensiveness, the use of financial reporting and hierarchical decentralisation; whereas profit growth was positively associated with politicisation and problem solving dissension in the SDMP. Performance has also been found to significantly and positively influence behavioural integration (Simsek et al. 2005). Papadakis (1998) explores in-depth the complex influence of performance on the SDMP and identifies that higher performance is strongly related to comprehensiveness, the use of financial reporting information, and the broader participation in the SDMP both in terms of departments and hierarchical levels. Also, long term performance measures (calculated on a 5 year basis) have stronger effects on the SDMP than short term performance measures (calculated on a 2 year basis). Furthermore, comprehensiveness and the use of financial reporting information in the SDMP were influenced mostly by long-term objective performance measures, whilst the behavioural characteristics of the SDMP such as problem solving dissension were mostly influenced by short term performance. In particular, short term sales growth was negatively associated with problem solving dissension, suggesting that when sales growth slows or declines, political behaviour is likely to ensue.

Fredrickson (1985) identified that when performance was poor, MBA students were more comprehensive than when performance was excellent. However, no differences were detected using the same procedure on a sample of experienced executives. Furthermore, Iaquinto and Fredrickson (1997) were unable to determine any significant effect of performance on agreement about the comprehensiveness of the SDMP.

Elbanna and Child (2007a) unexpectedly found that the positive relationship between rationality and SD effectiveness was weaker for companies with high performance than for low performance. The authors also found that the negative relationships between intuition and political behaviour and SD effectiveness were weaker for companies with high performance. Finally, Elbanna et al. (2012) found that performance had no significant effect on intuition in the SDMP.

3.5.4 Other Firm Characteristics

The effects of a number of other firm characteristics have also been studied, including external control, which is defined as "the degree of influence exerted on the firm by external actors" (Dean and Sharfman 1993a, p.591). External control was found to be negatively related to rationality in the SDMP (Dean and Sharfman 1993a), and Papadakis et al. (1998) identified that corporate control (e.g. private ownership, state ownership) significantly influenced certain characteristics of the SDMP: state-controlled organisations were more comprehensive and political in the SDMP, whereas privately owned organisations were less comprehensive, and relied less on financial reporting and rule formalisation in the SDMP. Also, Hickson et al. (1986) provide evidence that manufacturing and public services firms are associated with sporadic SDMPs, whereas service and privately owned organisations were associated with all three SDMPs (sporadic, fluid and constricted).

The formal planning systems of an organisation have been found to positively affect comprehensiveness, lateral communication, and politicisation in the SDMP (Papadakis et al. 1998). Papadakis (1995) also examined in detail the effects of formal planning systems on SDMP characteristics and found that comprehensiveness, the use of financial reporting information, and formalised rules in the SDMP were significantly related to the use of formal planning systems. Furthermore, formal planning systems were positively related to hierarchical decentralisation and lateral communication in the SDMP. However, formal planning systems did not appear to have any influence on the duration of the SDMP. Finally, slack resources (resources intentionally kept by an

organisation beyond those needed to meet operational commitments) have been found to be positively related to flexibility in the SDMP. Sharfman and Dean (1997a) identified that slack resources are positively related to openness to new ideas, sources of information, and roles in the SDMP; but that slack resources were not related to recursiveness (cycling back to earlier stages of the SDMP to re-examine key assumptions).

3.5.5 Firm Characteristics Summary

Firm characteristics exert a significant influence on SDMP characteristics relative to other contextual variables (Elbanna and Child, 2007b). For instance, power centralisation affects political behaviour; structure influences rationality and participation, and size is significantly related to comprehensiveness. External control, corporate control and formal planning also influence rationality, comprehensiveness, and political behaviour. However, organisational performance has produced confounding results, with return on assets and growth in profits exerting each influencing different SDMP characteristics. Careful theory development is required to disentangle the differing effects of alternative measures of organisational performance (Papadakis et al. 1998). It is apparent that performance has been used as a proxy for slack resources; future research may therefore consider using direct measures of slack resources to examine the effects on SDMP characteristics.

Finally, it is evident that no studies have examined firm capabilities, such as real-time information systems despite calls in the literature for such research (e.g. Eisenhardt 1989; Rajagopalan et al. 1993; Molloy and Schwenk 1995). The absence of such research is particularly noteworthy given that the ability to make comprehensive and fast SDs is vital to achieve superior levels of performance in high velocity environments (Eisenhardt, 1989). Such capabilities may rest upon the information systems and technologies of the firm.

Table 3.5. A Summary of Empirical Research: Firm Characteristics

Study	Methodology		Firm Characteristics Variables	Findings
	Sample	**Design**		
Fredrickson (1985)	321 MBA students and 116 executives	Laboratory study; hypothetical scenarios	Performance	MBA students' decision processes were affected by performance, but the executives' were not. When performance was poor, MBA students were more comprehensive
Miller (1987)	97 small and medium-sized firms	Field study; cross-sectional; structured interviews	Organisational structure (formalisation, integration, decentralisation and complexity)	Formalisation and integration were positively related to SDMP rationality, interaction and proactiveness. Decentralisation was positively related to SDMP interaction and proactiveness. Complexity was not related to the SDMP.
Bourgeois and Eisenhardt (1988)	4 microcomputer firms	Multiple case study; longitudinal; multi-method	Power centralisation	The greater the power centralisation in the chief executive, the greater the level of political behaviour among the top management team
Eisenhardt and Bourgeois (1988)	8 microcomputer firms	Multiple case study; longitudinal; multi-method	Power centralisation	Political SDMPs arise from power centralisation
Eisenhardt (1989)	8 microcomputer firms	Multiple case study; longitudinal; multi-method	Power centralisation	The data indicated no pattern linking decision speed to either qualitative or quantitative indicators of power centralisation
Fredrickson and Iaquinto (1989)	159 executives from 45 firms in stable and unstable environments	Field based; longitudinal; hypothetical scenario-based interviews	Size	As firms increase in size, the comprehensiveness of their SDMPs increase

Study	Methodology		Firm Characteristics Variables	Findings
	Sample	**Design**		
Dean and Sharfman (1993a)	57 strategic decisions in 24 companies	Field study; cross-sectional; structured interviews	External control, organisation size	Higher levels of external control are associated with less rational procedures in strategic decision-making. Organisation size had no significant relationship with rationality
Wally and Baum (1994)	151 CEOs	Field based; cross-sectional; mail survey; hypothetical scenario based policy capturing	Centralisation and formalisation	The more centralised a firm's decision-making structures, the faster the pace at which executives will evaluate an acquisition candidate. The more formalised a firm's decision-making structures, the slower the pace at which executives will evaluate an acquisition candidate
Papadakis (1995)	70 strategic decisions from 38 Greek manufacturing firms	Field study; cross-sectional; semi-structured interviews; archival data	Formal planning systems	Formal planning systems were positively related to comprehensiveness, the use of financial reporting, formalisation, hierarchical decentralisation, and lateral communication in the SDMP.
Iaquinto and Fredrickson (1997)	65 firms in stable and unstable environments	Field based; longitudinal; hypothetical scenario-based interviews	Organisation size and past performance	Changes in organisation size were negatively related to TMT agreement about the comprehensiveness of the SDMP. No association was found between past performance and agreement about the comprehensiveness of the SDMP
Sharfman and Dean (1997a)	57 strategic decisions in 25 companies	Field study; structured interviews; cross-sectional	Slack resources	Slack resources were found to have a positive effect on the openness dimension of flexibility in the SDMP, but had no significant effect on the recursiveness dimension

Study	Methodology		Firm Characteristics Variables	Findings
	Sample	**Design**		
Ashmos et al. (1998)	Executives from 52 organisations	Field study; hypothetical scenarios; mail survey	Rule orientation	Participation of internal stakeholder groups in the SDMP is greater in organisations that are less rule orientated than in organisations that are more rule orientated
Papadakis et al (1998)	70 strategic decisions from 38 Greek manufacturing firms	Field study; cross-sectional; semi-structured interviews; archival data	Planning formality, performance, corporate control, size	Planning formality has a positive influence on comprehensiveness, lateral communication and politicisation. Performance (return on assets) is positively associated with comprehensiveness, use of financial reporting and hierarchical decentralisation. Performance (profit growth) is associated with politicisation and problem solving dissension. Comprehensiveness increases with size. State owned enterprises are associated with more comprehensive and political SDMPs and privately owned organisations are less comprehensive, and rely less on financial reporting and rule formalisation in the SDMP
Papadakis (1998)	As in Papadakis et al, (1998)	As in Papadakis et al, (1998)	Short term and long term performance using subjective and objective measures	Performance significantly influences SDMP characteristics. Short and long term measures exert different influences on different SDMP characteristics.
Covin et al (2001)	96 manufacturing firms	Field study; cross sectional; mail survey	Organicity	In high-technology environments, intuitive-experience based SDMPS were more positively related to performance among firms with organic than mechanistic structures. In low-tech industries, technocratic SDMPs are more positively related to performance among firms with an organic than mechanistic structures
Baum and Wally (2003)	318 CEOs	Field based; cross-sectional; mail survey; hypothetical scenario based policy capturing	Organisational structure (centralisation of strategic management, decentralisation of operations management, formalisation of routines, informalisation of non-routines)	Centralisation of strategic management and decentralisation of operations management were positively related to SD speed. Formalisation of organisational routines and informalisation of non-routines were positively related to SD speed. SD speed mediates the relationship between centralisation and formalisation, and firm performance

Study	Methodology		Firm Characteristics Variables	Findings
	Sample	**Design**		
Simsek et al. (2005)	402 small organisations	Field study, cross sectional, mail survey	Development of a behavioural integration measure and modelling of the antecedents of behavioural integration	Firm performance was significantly and positively associated with behavioural integration, size was significantly and negatively related to behavioural integration
Elbanna and Child (2007a)	Executives from 169 Egyptian manufacturing companies	Field study; cross-sectional; drop-off survey	Organisational size and performance	The positive relationship between rationality and SD effectiveness was weaker for companies with high performance than with low performance. The negative relationships between intuition and political behaviour and SD effectiveness were weaker for companies with high performance than with low performance. Size did not moderate any of the relationships between SDMP characteristics and SD effectiveness
Elbanna and Child (2007b)	As that of Elbanna and Child (2007a)	As that of Elbanna and Child (2007a)	As that of Elbanna and Child (2007a)	Firm characteristics have a significant influence on the rationality of the strategic decision making process. The relative importance of firm characteristics in explaining variance in rationality is greater than both the external environment and SD specific characteristics
Elbanna et al. (2012)	As that of Elbanna and Child (2007a)	As that of Elbanna and Child (2007a)	As that of Elbanna and Child (2007a)	Company size had a negative association with intuition, performance did not have a significant effect on intuition

3.6 Conclusions

The major issues, tensions and debates in the domain concerning the effects of contextual variables are stated in sections 3.6.1 to 3.6.9. These issues relating to theory development concern: (i) the need for fewer constructs and more careful modelling due to an incremental approach to theory development; (ii) improving construct validity by using psychometric TMT variables as opposed to demographic proxy variables; (iii) modelling the actual mediating SDMP characteristic and not specifying direct effects of contextual variables on SDMP outcomes; (iv) the importance of examining multi-theoretic models and the moderating effects of contextual variables and; (v) the need to extend the range of SDMP outcomes that have so far been examined. Also, the methodological implications arising from this chapter include: (i) the importance of large samples and multivariate analysis; (ii) the need to improve the reliabilities of SDMP measures, and; (iii) issues surrounding levels of analysis. These issues are now discussed briefly in turn.

3.6.1 The Need for Fewer Constructs and More Careful Modelling

There is consensus in the literature that "too much invention of language" (Bower, 1997, p.27) has hindered theory development (Papadakis and Barwise, 1997b). This chapter has identified a plethora of differing definitions and operationalisations of rationality and comprehensiveness, and the two are frequently used interchangeably (Priem et al. 1995; Goll and Rasheed, 1997; Papadakis et al. 1998; Papadakis and Barwise, 2002; Goll and Rasheed, 2005; Elbanna, 2006), despite evidence that contextual variables such as SD uncertainty and firm size affect them each differently.

In an attempt to address problems associated with the surfeit of SDMP characteristics, Elbanna (2006) and Elbanna and Child (2007a) highlight how rationality, comprehensiveness, intuition, and political behaviour are a parsimonious set of constructs which adequately represent the two perspectives that underpin the SDMP literature; synoptic formalism and political incrementalism (Eisenhardt and Zbaracki, 1992; Fredrickson and Mitchell, 1984; Hart, 1992; Hitt and Tyler, 1991). Elbanna (2006)

and Elbanna and Child (2007a) suggest that rationality and comprehensiveness are constructs that represent the synoptic formal perspective, and political behaviour and intuition are constructs that embody the incremental perspective. A common set of terminology and consistency in the variables modelled would help a more coherent body of theory to develop (Papadakis and Barwise, 1997b). Furthermore, including both rationality and comprehensiveness in one study would enable researchers to discern the relative influence of context on each of them.

Lack of replication has hindered the coherent development of theory in the SDMP domain of literature. There is a need to replicate, or at least control for, some of the most significant variables and relationships identified in this chapter. For example, decision speed has significant implications for performance under certain external environmental conditions (Baum and Wally, 2003; Eisenhardt 1989; Judge and Miller, 1991); despite this most studies omit it as a control variable. Similarly, studies attempting to explain SDMP outcomes in certain external environments have focused on comprehensiveness or rationality. However, there is considerable empirical evidence that the SDMP is multi-dimensional and thus SDMP outcomes are subject to the influence of other SDMP characteristics, such as political behaviour (Dean and Sharfman, 1996; Elbanna and Child, 2007a). Closer attention to control variables would lead to greater implicit replication.

3.6.2 Demographic proxy measures

Using demographics as proxies for the underlying psychometric characteristics of the TMT has received strong criticism and Priem et al. (1999) suggest that this approach sacrifices construct validity for measurement reliability, and explanation for prediction. To improve methodological rigour and to develop theory with greater explanatory power, future research should use direct measures of contextual variables. In particular, TMT expertise is likely to be a significant direct and indirect influence on the SDMP, and cognitive diversity—whilst only featured in a handful of

empirical studies—also appears to be an important TMT construct for explaining SDMP characteristics.

3.6.3 Mediating SDMP characteristics

There is a need to include measures for actual decision processes. For example, examining the effects of cognitive style on decision outcomes neglects the mediating role of the actual decision process. Because a decision-maker has a rational cognitive style, it does not necessarily follow that the actual SDMP will be rational; other contextual variables may have a more significant effect in determining the decision process (Bakken and Haerem 2010). It is fundamentally important to measure actual mediating decision processes to fully understand the causal relationships between contextual variables, SDMP process characteristics and SDMP outcomes.

3.6.4 Multi-theoretic perspectives

By including contextual variables from each of the four categories of contextual variable, researchers can compare the overall impact and predictive power of each of these theoretical perspectives for explaining variance in SDMP characteristics. Whilst most studies have focused on one category of contextual variable, there is no theoretical rationale as yet, to suppose that any category is more or less significant than any other (Rajagopalan et al. 1993).

3.6.5 Contextual variables as moderators

With the exception of the external environment, there is scant empirical research examining the moderating effects of contextual variables on the relationships between SDMP characteristics and outcomes, and even research examining the moderating effects of the external environment has produced conflicting findings. Furthermore, TMT variables are yet to feature as moderators. This

chapter has highlighted the potentially significant moderating effects of TMT expertise together with SD familiarity which are likely to influence the effects of intuition on decision quality. Models which incorporate both SDMP characteristics, as well as contextual variables as moderators, are likely to predict more variance in outcome variables, because the limited empirical evidence which exists has shown such interactions to be highly significant (Elbanna and Child, 2007a). Also, future research should consider more complex moderating effects, and model three-way interactions. Examining such interactions is important because, for example, an environment which is *hostile* and dynamic compared to one which is *munificent* and dynamic has very different implications for SDMP characteristics and outcomes (Goll and Rasheed 1997; Mitchell et al. 2011). Furthermore, interactions between the external environment, firm characteristics and SDMP characteristics have been shown to affect organisational performance (Covin et al. 2001).

3.6.6 SDMP Outcomes

The focus of much of the SDMP research has been on the quality or effectiveness of an SD (e.g. Amason 1996; Dean and Sharfman 1996; Hough and White 2003) or organisational performance (e.g. Khatri and Ng 2000; Wally and Baum 2003). However, there are other outcomes of the SDMP that contextual variables significantly influence that warrant attention, such as commitment (Olson et al. 2007a), implementation success (Noble and Mokwa, 1999) and speed (Eisenhardt, 1989; Judge and Miller, 1991). These outcome variables are critical for the overall success of an SD and organisational performance, but also to avoid organisational decline (Papadakis and Barwise, 1997b; Wooldridge and Floyd 1990). Eisenhardt and Zbaracki (1992, p.34) state that "past research has a limited range of outcomes...studies could explore how to make strategic decision processes faster, creative or more adaptive, and how to ensure better implementation of decisions...research could explore when are specific outcomes most important, and how, if at all, process outcomes such as decision quality, speed, and implementation are simultaneously achievable." Whilst economic outcomes such as organisational performance provide researchers with dependent variables that can be measured with objective data, they are subject to a vast array of extraneous influences (Elbanna,

2006), and there are many non-economic outcomes that are great importance to the TMT such as commitment (Rajagopalan et al. 1993; Papadakis and Barwise, 1997c).

3.6.7 Large sample sizes and multivariate analysis techniques

"Most of the managerially relevant SDM research is based on a fairly small number of cases studied in depth" (Papadakis and Barwise 1997b, p.296). For instance, the insights provided by Bourgeois and Eisenhardt (1988), Eisenhardt and Bourgeois (1988), Eisenhardt (1989), Dean and Sharfman (1993a; 1996); Papadakis et al. (1998) and Papadakis and Barwise (2002) all draw upon samples of 70 SDs or fewer from 38 or fewer organisations. Therefore, to improve the external validity and generalisability of SDMP research, there is a need for large-sample field research (Papadakis et al. 2010; Rajagopalan et al. 1993). To empirically examine multi-theoretic models, and to incorporate contextual variables as moderators, large sample sizes will be essential to ensure that the ratio of cases to predictor variables is sufficient. Multivariate analysis comprises a set of statistical analysis techniques well suited to analysing the relationships between multiple contextual variables, SDMP characteristics, and SDMP outcomes.

3.6.8 Reliability of measures

This chapter has highlighted how measures of SD specific characteristics have suffered from relatively low levels of internal consistency, indicating high levels of random error. Unreliable measures make detecting significant relationships less likely (Bagozzi, 1994). Given the empirical evidence which suggests that SD specific characteristics are potentially one of the most significant contextual influences on the SDMP, future research should seek to improve the reliabilities of SD specific characteristics.

3.6.9 Individual decisions as the level of analysis

Variance in the level of analysis makes comparisons of findings difficult, and has not helped the development of theory in the SDMP literature. Whilst many studies focus on individual decisions as the level of analysis, a large number adopt an organisational level of analysis; assuming that organisations have consistent SDMP characteristics. This is despite considerable empirical evidence showing that the SDMP varies according to SD specific characteristics (Elbanna and Child 2007b; Hickson et al. 1986; Papadakis et al. 1998). A focus on individual decision episodes is therefore recommended. Furthermore, this chapter has highlighted the lack of significant findings of studies that have attempted to examine the effects of CEO characteristics on the SDMP. Unless the focus of research is small organisations, it is likely that TMT characteristics will have more significant effects on the SDMP as opposed to any one individual (Papadakis and Barwise, 2002).

3.6.10 Summary

This chapter has identified four theoretical perspectives (the strategic choice or upper echelons perspective, the SD specific characteristics perspective, the environmental determinism perspective, and the firm characteristics perspective). Furthermore, this chapter has also identified the contextual variables associated with each of the four theoretical perspectives, which directly and indirectly influence the SDMP. Finally, this chapter has provided an in-depth analysis of the underlying themes, issues, tensions and debates in the literature, concerning the influence of these four perspectives on the SDMP. The fragmented nature of the studies reviewed presents a compelling rationale for research that develops and tests multi-theoretic models that systematically examine the effects of multiple contextual variables from each of the four theoretical perspectives. It is apparent that contextual variables can act as both antecedents of the SDMP, as well as moderators which influence the effects of SDMP characteristics on SDMP outcomes. The majority of existing studies each only focus on one contextual variable, often a dimension of the external environment. However, research with contextual variables from each of the four theoretical perspectives provides several advantages.

First it can predict more variance in SDMP characteristics and outcomes; second, it can reveal the relative as well as overall impact of each theoretical perspective on the SDMP, and third; failure to systematically examine the influence of contextual variables from each theoretical perspective is likely to result in an incomplete and inaccurate picture of SDM (Hough and White, 2003). Finally, whilst research has begun to examine the moderating influence of context on the SDMP characteristics-outcomes relationship (e.g. Elbanna and Child, 2007a), overall there is a dearth of research incorporating contextual variables as moderators, despite the fact that studies modelling both SDMP characteristics and contextual variables are able to explain much more variance in the outcomes of the SDMP (Elbanna and Child, 2007a).

In particular, this section has highlighted how TMT variables have yet to be examined as moderator variables, and how there is a need to focus on psychometric variables to improve the validity and explanatory capability of research. Given the theoretical importance of TMT expertise for explaining decision processes and for determining the effectiveness of certain decision processes, such as intuition, a priority for SDMP research is to operationalise and test a measure of TMT expertise. Furthermore, TMT cognitive diversity has been shown to be an important predictor of comprehensiveness and conflict in the SDMP, however, its influence on other important SDMP characteristics such as procedural rationality and political behaviour has not been subject to empirical investigation.

The important methodological implications arising from this chapter highlight: (i) a particular need for future research to use large sample sizes and multivariate techniques; (ii) for future research to improve measurement reliability, and; (iii) the importance of adopting a decisional level of analysis, because it is apparent that the SDMP differs according to the specific characteristics of the particular decision being made.

Having already reviewed the literature regarding SDMP characteristics, this chapter together with chapter two provides the basis for the theoretical rationale and conceptual model which are explicated in chapter 4.

CHAPTER 4 – CONCEPTUAL MODEL AND HYPOTHESES

4.1 Introduction

This chapter builds upon chapters two and three, in order to develop a conceptual model and testable hypotheses. Through the collection and analysis of quantitative data, the conceptual model and hypotheses are tested, as detailed in chapters 5-8, in order to address the important gaps in the literature as identified in chapters 2 and 3. Furthermore, as recommended by Churchill and Iacobucci (2005) and Mooi and Sarstedt (2011) this chapter utilises the rich data gathered from the qualitative phase of data collection[1] to assist with the hypotheses formulation (see chapter 5 for a comprehensive discussion concerning the methodology employed for both the qualitative and quantitative data collection).

The conceptual model and hypotheses presented in this chapter address the following important priorities for theory development in the SDMP domain of literature:

1. A multi-dimensional conceptual model is developed and tested, and includes both synoptic-formal (represented by procedural rationality, comprehensiveness, behavioural integration) and political incremental perspectives (represented by intuition and political behaviour).

2. The conceptual model examines the relative influence of the TMT, SD specific characteristics, the external environment and firm characteristics on the five SDMP characteristics.

[1] Semi-structured interviews were conducted with 30 senior executives (e.g. CEOs, MDs, Chief Officers, and Directors) from medium and large, manufacturing and service sector organisations. Please refer to chapter 5 for a detailed discussion concerning research methodology.

3. Multiple SDMP outcomes are modelled, including SD quality, implementation success, commitment, and speed.

4. Contextual variables are also included as moderator variables. Thus, the conceptual model integrates context, process, and outcomes to clarify the contingency relationships (Papadakis and Barwise, 1997c).

A significant body of empirical evidence shows that the SDMP is multi-dimensional (e.g. Eisenhardt, 1989; Dean and Sharfman, 1996; Papadakis et al. 1998; Elbanna and Child, 2007a), and the synoptic versus incremental debate has not been adequately tested (Elbanna, 2006). Hence, the multi-dimensional SDMP model in the present study addresses an important gap in the literature, and the present study provides empirical evidence showing how multiple different SDMP characteristics from each side of the synoptic-incremental debate, influence different SDMP outcomes. Furthermore, the present study specifically addresses intuition in SDM, a vital yet understudied topic, and attempts to discern the boundary conditions for intuition to positively influence SDMP outcomes.

By combining all four categories of contextual variables (TMT, SD specific characteristics, external environment, and firm characteristics), the conceptual model can help to reveal the individual influence of contextual variables as well as the relative importance of each theoretical perspective (Rajagopalan et al. 1997; Elbanna and Child, 2007b; Papadakis et al. 2010), as there is no reason to suppose any one perspective to be more or less important than any other (Rajagopalan et al. 1993). Additionally, past research has focused on a narrow range of outcomes, most often economic ones such as organisational performance, despite there being a number of non-economic outcomes considered to be important by strategic decision-makers (Eisenhardt and Zbaracki, 1992; Rajagopalan

et al. 1993; 1997; Papadakis and Barwise, 1997c). Contextual variables are also modelled as moderator variables in order to explain more variance in SDMP outcomes (Elbanna and Child, 2007a; Papadakis et al. 2010). Also, direct psychometric measures are used for all TMT variables as opposed to demographic proxies, to enhance the validity and explanatory capability of the present study (Priem et al. 1999; Hough and ogilvie, 2005; Papadakis et al. 2010). Finally, a measure of TMT expertise is developed and tested, and for the first time the effects of TMT cognitive diversity on procedural rationality, political behaviour, and intuition are examined.

Section 4.2 presents the conceptual model, and outlines this study's research questions. Section 4.3 describes the first group of hypotheses, which relate to the multi-theoretic contextual influences on the characteristics of the SDMP. Section 4.4 states the hypotheses concerning the effects of SDMP characteristics on SDMP outcomes, and in section 4.5 hypotheses are presented relating to the moderating influence of contextual variables on the relationships between SDMP characteristics and SDMP outcomes. Finally, section 4.6 summarises this chapter.

4.2 The Conceptual Model and Research Questions

This section explains the theoretical rationale for the conceptual model presented, and outlines the research questions that this study sets out to answer.

It has been argued that the SDMP cannot be properly understood unless the context in which the SDMP takes place is understood (Pettigrew 2003). The lack of a systematic treatment of contextual variables has resulted in "an incomplete, and perhaps inaccurate, picture of SDM" (Hough and White 2003, p.488). An incremental approach to theory development, whereby most existing studies focus only a limited number of contextual variables, has resulted in contradictory findings and left SDMP

scholars unable to answer the question, what are the key contextual influences on the SDMP? (Papadakis and Barwise, 1997b). This is because very few SDMP studies have examined integrative models which combine multiple contextual variables, and overall there has been very limited development of theory in this area (Brouthers et al 2000; Elbanna and Child 2007b). There is a growing recognition in the SDMP literature of the need for research that comprehensively examines the effects of multiple different contextual variables on the SDMP (Rajagopalan et al. 1993; 1997; Papadakis et al. 1998; Child et al. 2003; Hough and White 2003; Elbanna 2006; Elbanna and Child 2007b; Nutt and Wilson 2010; Papadakis et al. 2010).

Integrative SDMP models, which simultaneously examine multiple contextual variables, can provide a better understanding of how SDMP characteristics affect SDMP outcomes and predict more variance in the characteristics of the SDMP (Hitt and Tyler 1991; Eisenhardt and Zbaracki 1992; Papadakis and Barwise 1997c; Elbanna and Child 2007a). Such research can significantly improve our understanding of the SDMP which in turn can improve its practice (Brouthers et al. 2000; Elbanna and Child 2007a; Nutt and Wilson 2010; Papadakis et al. 2010).

Authors (e.g. Hitt and Tyler 1991; Papadakis et al. 1998; Elbanna and Child 2007b) have associated each of the four categories of contextual variable with a theoretical perspective; e.g. the TMT is associated with the upper echelons perspective (Hambrick and Mason 1984) and the external environment is associated with the environmental determinism perspective (Aldrich 1979; Hannan and Freeman 1977). By including contextual variables from each of the four categories of contextual variable, researchers can compare the overall impact and predictive power of each of these theoretical perspectives for explaining variance in SDMP characteristics. Whilst most studies have focused on one category of contextual variable, there is no theoretical rationale as yet, to suppose that any category is more or less significant than any other (Rajagopalan et al. 1993).

With the exception of studies featuring the external environment, there is scant empirical research examining the moderating effects of other contextual variables on the relationship between SDMP characteristics and outcomes, and even research examining the moderating effects of the external environment has produced conflicting findings. Furthermore, TMT variables are yet to feature as moderators. Models which incorporate both SDMP characteristics, as well as contextual variables as moderators, can predict more variance in outcome variables (Elbanna and Child, 2007a). Inconsistencies among existing studies highlight the need for future research to pay close attention to context (Elbanna and Child 2007b). For example, the implications of comprehensiveness for organizational performance remain unclear, with Fredrickson and Mitchell (1984) finding negative effects, and Bourgeois and Eisenhardt (1988) finding positive effects. Closer scrutiny of context will reveal insights which can help to reconcile such contradictory findings. Furthermore, the insights provided by the social-psychology literature indicate that the relationship between intuition and SD quality may be contingent upon the expertise of the decision-makers and the familiarity of the SD being made (Kahneman and Klein, 2009).

The extant SDMP research has commonly focused on testing bivariate relationships between rationality or comprehensiveness (the two are often used interchangeably as discussed in chapter 2) and organisational performance, often with a dimension of the external environment as a moderator variable. Because of the considerable empirical evidence that suggests that the SDMP is multi-dimensional dimensional (e.g. Bourgeois and Eisenhardt, 1988; Eisenhardt, 1989; Dean and Sharfman, 1996; Papadakis et al. 1998; Papadakis and Barwise, 2002; Elbanna and Child, 2007a), multiple SDMP characteristics should be modelled, ideally representing both the synoptic-formal and political-incremental perspectives (Elbanna, 2006). There has been a surge of academic interest in intuition in SDM (Hogarth, 2010), and it has been described as a vitally important construct in order to portray the SDMP in a more realistic light (Eisenhardt and Zbaracki, 1992). Whilst there has been some conceptual articles outlining a compelling case for how intuition may lead to successful SDs

(e.g. Dane and Pratt, 2007; Hodgkinson et al. 2008; 2009; Salas et al. 2010), empirical evidence is lacking, and that which does exist is contradictory, finding both positive effects (Khatri and Ng, 2000) and negative effects (Elbanna et al. 2012). Paying close attention to the moderating influence of contextual variables, and in particular TMT expertise which is highlighted as being vitally important in the social-psychology literature (Hodgkinson et al. 2008; Kahneman and Klein, 2009) can help to reveal the boundary conditions for intuition to produce positive SDMP outcomes. Furthermore, the extant literature has focused overly on economic outcomes and paid insufficient attention to other important SDMP outcomes that are important to managers and are critical to the overall success of the SD (Eisenhardt and Zbaracki, 1992; Rajagopalan et al. 1993; 1997; Papadakis and Barwise, 1997c). SD speed is of vital importance for organisations to be able to seize opportunities in fast-changing environments (Eisenhardt, 1989; Judge and Miller 1991; Baum and Wally, 2003), and implementation success and commitment are crucial for the successful execution of an SD (Dean and Sharfman, 1996; Noble and Mokwa, 1999). Despite this, we know little about how different SDMP characteristics and contextual variables affect these important outcomes (Papadakis and Barwise, 1997c).

Taking these important points discussed into consideration, the present study attempts to make a significant and original contribution to knowledge in the SDMP domain of literature by developing and testing a conceptual model (see figure 4.2), which includes:

1. Contextual variables associated with each of the four theoretical perspectives. TMT variables include expertise, cognitive diversity and power decentralisation. SD specific characteristics include familiarity, time pressure, uncertainty, and magnitude of impact. External environmental variables include environmental dynamism and environmental hostility-munificence[2]. Finally, firm characteristics include external control, slack resources, performance, and size. These contextual

[2] Environmental hostility and munificence are conceptualised and measured on a continuum, consistent with prior empirical research e.g. Khandwalla, (1977); Papadakis et al. (1998); Elbanna and Child, (2007a; 2007b).

variables are modelled as both antecedents of SDMP characteristics, and as moderators of the relationships between SDMP characteristics and outcomes;

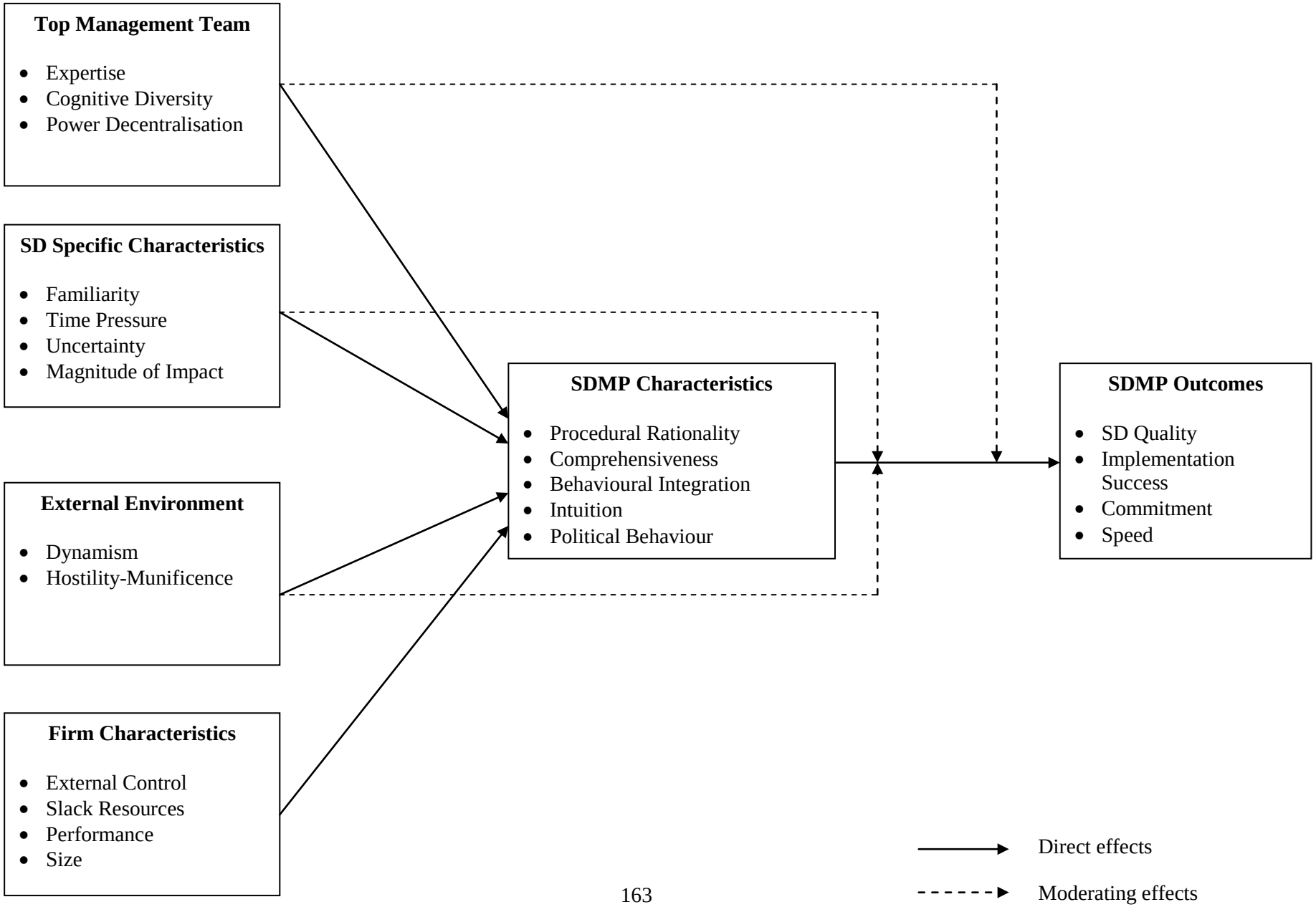
2. Two perspectives of SDM are combined: procedural rationality, comprehensiveness and behavioural integration were chosen as representative of the synoptic-formal perspective, and intuition and political behaviour were chosen as representative of the political-incremental perspective;

3. Four SDMP outcome variables are included, namely, SD quality, implementation success, commitment, and speed[3], and;

4. Direct psychometric measures of TMT variables, including a newly developed TMT expertise measure in order to understand the boundary conditions for intuition to positively influence SDMP outcomes.

[3] Whilst the SDMP characteristics and contextual variables have been defined previously in chapters 2 and 3, the SDMP outcomes are defined as follows: SD quality is the extent to which the decision achieves the objectives intended for it at the time it was made and positively affects organisation performance (Amason, 1996). Implementation success is the extent to which the communication, interpretation, adoption, and enactment of the strategic decision was effective (Noble and Mokwa, 1999). Commitment is the extent to which the decision-makers comprehend and support the goals and objectives of the SD (Noble and Mokwa, 1999). Finally, SD speed is defined as how quickly decision-makers "execute all aspects of the (strategic) decision-making process, spanning from the initial consideration of alternative courses of action to the time at which a commitment to act is made" (Forbes, 2005, p.355).

Figure 4.2 The Conceptual Model



4.2.1 Research Questions

The conceptual model presented in figure 4.2 will enable the present study to empirically examine the following research questions:

1. Which theoretical perspectives out of the TMT, SD specific characteristics, the external environment, and firm characteristics have the most significant influence on the characteristics of the SDMP?

2. What are the effects of the different SDMP characteristics on SDMP outcomes; not just SD quality, but also implementation success, commitment, and SD speed?

3. Do implementation success, commitment, and SD speed mediate the effects of context and SDMP characteristics on SD quality?

4. What are the boundary conditions for intuition to significantly and positively influence SD quality?

5. What are the moderating effects of the TMT on the relationships between political behaviour and SDMP outcomes?

6. What are the moderating effects of the external environment on the relationship between SD speed and SD quality?

On the basis of these research questions, testable hypotheses were developed which are stated in sections 4.3 to 4.5.

It should be noted that it is beyond the scope of the present study to empirically examine all possible relationships between contextual variables and SDMP characteristics, and all potential moderating effects of contextual variables on the relationships between SDMP characteristics and SDMP outcomes. In order to do so would require in excess of 325 hypotheses. Hence, specific hypotheses were developed and tested based on a clear and compelling theoretical rationale derived from a

comprehensive review of the literature (chapters 2 and 3) and based on the exploratory qualitative phase of research. The literature review and qualitative phase of research were used specifically to identify the most pertinent variables and most important relationships to enable theory development in the SDMP domain of literature. In particular, the present study examines the moderating role of the TMT as no prior studies have examined contingency relationships between SDMP characteristics and TMT variables (Shepherd and Rudd, forthcoming). Hence the present study does not examine the moderating role of firm characteristics, largely because these were not identified as being as important as other contextual variables during the qualitative phase of research.

The present study focuses on testing the overall impact of each theoretical perspective on each of the five SDMP characteristics because it remains unclear which of the four theoretical perspectives is the most significant for explaining variance in SDMP characteristics (Shepherd and Rudd, forthcoming). Once it is established which of the four theoretical perspectives is most important, future research can then focus on testing the individual relationships between contextual variables and SDMP characteristics.

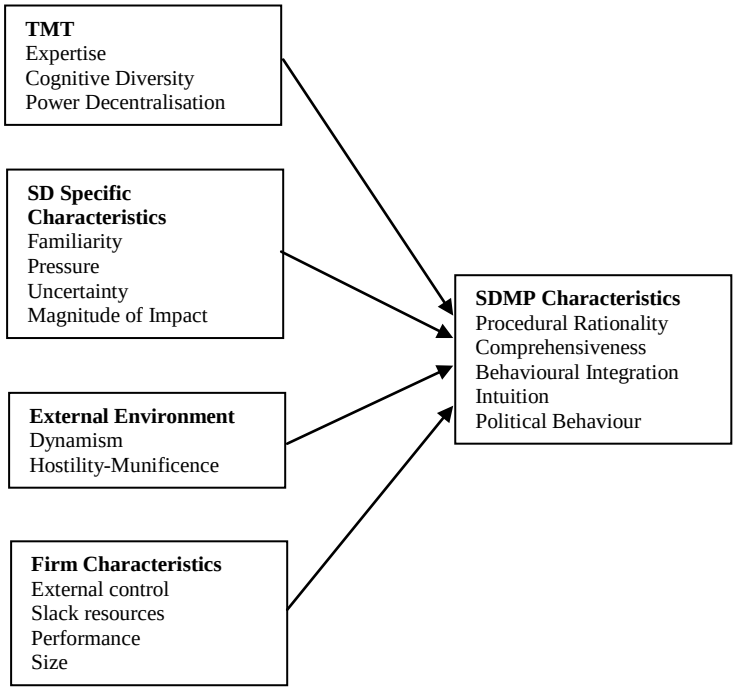
The fact that the present study does not develop hypotheses for all possible relationships may be considered a limitation and is explicitly discussed as such in chapter 9 of this thesis. The remainder of this chapter draws upon the review of the literature and qualitative phase of research in order to justify the testable hypotheses which are explicated.

4.3 First Group of Hypotheses: Multi-Theoretic Influences on SDMP Characteristics

The first group of hypotheses relate to the first research question, concerning the influence of contextual variables on SDMP characteristics. This research question is examined through four

hypotheses, one for each theoretical perspective (TMT, SD specific characteristics, the external environment, and firm characteristics), and is shown in figure 4.3.

Figure 4.3 Multi-Theoretic Perspectives



4.3.1 The Top Management Team: The Strategic Choice or Upper Echelons Perspective

The strategic choice perspective posits that organisational forms and outcomes are the product of the strategic choices that the TMT make (Child, 1972), and thus TMTs have a high degree of discretion over the SDs that they make. Upper echelons theory builds on the premise of strategic choice theory by viewing organisational outcomes as being heavily subject to the idiosyncrasies of the TMT because they have overall responsibility for SDM and setting the goals and direction of the organisation (Hambrick, 2007; Hambrick and Mason, 1984). Because executives are boundedly rational (March and Simon 1958; Cyert and March 1963), the SDs made by TMTs are subject to behavioural influences and are not the outcomes of perfectly rational utility-maximising processes (Dean and Sharfman, 1996).

Both Brouthers et al. (2000) and Hitt and Tyler (1991) suggest that the strategic choice or upper echelons perspective has considerable potential for explaining variation in SDMP characteristics because ultimately SDs are fashioned by executives, and therefore the strategic choices that they make are significantly influenced by their values, experiences, expectations, and cognitive bases (Hitt and Tyler, 1991). Brouthers et al. (2000) found that overall the TMT had a greater influence on SDMP characteristics than the external environment, and Hitt and Tyler (1991) also found that the strategic choice perspective significantly influenced SDM. However, somewhat contrary to this, Papadakis and Barwise (2002) found that the TMT and CEO had relatively less influence on SDMP characteristics than broader contextual variables (the SD's magnitude of impact, firm size, environmental hostility, and ownership type). Furthermore, Elbanna and Child's (2007b) multi-theoretic examination of procedural rationality omitted the TMT entirely as a category of contextual variables.

A large stream of research has used demographic proxies for the underlying behavioural traits of the TMT, and research examining the influence of the TMT using demographic proxies has suffered from problems associated with construct validity and explanatory ability (Priem et al. 1999). This has been labelled the black box criticism (Lawrence, 1997; Papadakis et al. 2010), and may explain why the influence of the TMT on the SDMP has been found to be less significant than compared to other contextual variables (Papadakis and Barwise, 2002). Studies adopting direct psychometric measures have enjoyed greater success, finding cognitive diversity to be negatively associated with comprehensiveness (Miller et al. 1998) and positively associated with task conflict (Olson et al. 2007a). The disagreements caused by cognitive diversity may also give rise to political behaviour, as coalitions are formed and certain TMT members formulate the SD "behind the scenes while not opening up the process to others" (Miller et al. 1998, p.42). Cognitive diversity is also likely to diminish procedural rationality, because the SD will not have been opened up for the entire TMT to gather and analyse relevant information. Also, power decentralisation appears to be negatively related to political behaviour (Bourgeois and Eisenhardt 1988; Eisenhardt and Bourgeois 1988). It is likely to

be the case that when decision-makers perceive there to be a highly divided power structure amongst the TMT, they pro-actively engage in political behaviour, by forming coalitions and bargaining so as to influence the SDMP (Rajagopalan et al. 1993).

Furthermore, expertise is an important concept that has yet to permeate the SDMP literature, despite a significant conceptual literature highlighting its veracity (e.g. Dane and Pratt, 2007; Ericsson et al. 2007; Hodgkinson et al. 2009; Salas et al. 2010), and a large social-psychology literature also emphasising its utility in decision-making research (Chase and Simon, 1973; Dreyfus and Dreyfus, 1986; Ericsson and Charness, 1994; Ericsson, 2006; Kahneman and Klein, 2009; Klein, 1998; 2003). It may be the case therefore, that because of the problems associated with the use of demographic proxies, the true influence of the TMT on SDMP characteristics has been disguised, and that through the operationalisation of direct psychometric variables more significant results will occur. As a result, the following hypothesis is stated[4]:

H1. TMT variables will account for a significant amount of variance in SDMP characteristics, above and beyond the variance attributable to SD specific characteristics, the external environment, and firm characteristics.

4.3.2 The SD Specific Characteristics Perspective

Empirical evidence has shown SD specific characteristics to be one of the most significant influences on the SDMP. Papadakis et al. (1998) found that SD specific characteristics appeared to have the greatest influence on the process by which SDs are made, and Elbanna and Child (2007b) found that a significant amount of variance in the rationality of the SDMP was explained by SD specific characteristics, more so than environmental variables and only 1% less than firm characteristics. Hence it appears as though decision-makers' perceptions of the matter being decided upon

[4] The present study uses the same wording for hypotheses 1-4 as Elbanna and Child (2007b) and similar wording to Papadakis and Barwise (2002) to ensure consistency and to allow the comparison of results.

significantly influences their subsequent handling of the problem or opportunity (Hickson et al. 1986). SD specific characteristics found to have a significant influence on the subsequent process of making the SD include complexity (Astley et al. 1982), motive (Fredrickson, 1985; Shrivastava and Grant, 1985), uncertainty (Dean and Sharfman, 1993a; Sharfman and Dean, 1997a; Papadakis et al. 1998; Elbanna et al. 2012), magnitude of impact, and time pressure (Papadakis et al. 1998). Also, evidence from social-psychology (e.g. Ericsson et al. 2007) suggests that the familiarity of an SD will be a significant influence on decision processes, which is captured succinctly in the following quotes from three senior executives interviewed as part of the qualitative phase of the study:

"We've done a string of acquisitions and know the market very well...we have a lot more scope to rely on intuition (and) restrict the amount of analytical work that goes in."

"We've made bucket loads of acquisitions, some good, some bad. They're important decisions, particularly if you're going to do a decent sized acquisition, they're important decisions but you know, once you've done them a bit, it's like yeah, okay, fine, get on with it."

"It's very easy for me to say open up a new market; I wouldn't even have to … I mean I'd pass it by the board but it would be passed by the board but it could never be teased. Because they know I've done it many, many times before."

Furthermore, decision uncertainty was highlighted as being of particular saliency during the interviews, with one executive highlighting how it may encourage a more rational SDMP:

"You know, the more uncertainty there is, the more likely that you are to go through … you know, to refer to the reams of number-crunching and research."

However, two other executives contradicted this by stating:

"I mean decisions about entries to completely new markets have got to be much more intuitive because you haven't got any data."

"Ultimately the less information there is, the more you're relying on experience and intuition...The role I think of intuition and … it depends … and the amount it's used will depend on the gap in the data... all too often, the further you're looking ahead, the less data and certainty you're dealing with. And so I think the further you're looking ahead, the more that you … you know, you will not have explicit data that tells you what's going to happen in three years' time. That's where you're making judgment calls."

Furthermore, the magnitude of impact of a decision was highlighted as being a significant influence on the procedural rationality of the SDMP, and was identified as discouraging executives from following intuitive SDMPs:

"The bigger the amount of money that's involved, the more you try and get as much data and rational analysis."

"If it's a really key decision, you're going to put a heck of a lot of data into it. If it's less important, you are willing to you know, use the heuristic where you will say if I do this, this will happen? And it's not going to hurt you to the same extent as something that potentially has a big risk."

Finally, a number of executives highlighted that the time pressure associated with the SD would be a significant determinant of the SDMP:

"We literally had seven days to do the acquisition you know, so right at the end of that period you know, there were lots of gaps and holes in our analysis...it was sort of a billion and a half acquisition...the final decision was based on intuition."

"If you've got time to do some analysis, yes but there will be times when you haven't got time to do it and events are … are you know, things are happening so quickly that you have to make a snap decision."

Therefore, in light of the importance attributed to SD specific characteristics by the executives interviewed, and because prior empirical evidence has shown that the labels and categories that executives attribute to SDs significantly affects the subsequent process (Elbanna and Child, 2007b; Hickson et al. 1986; Papadakis et al. 1998); the following hypothesis is stated:

H2. SD specific characteristics will account for a significant amount of variance in SDMP characteristics, above and beyond the variance attributable to the TMT, the external environment, and firm characteristics.

4.3.3 The External Environment: The Environmental Determinism Perspective

The environmental determinism perspective views the SDMP as being shaped by the characteristics of the external environment, and the TMT are seen largely as being passive, and their role is limited to facilitating adaptation to the environmental forces which are beyond their control (Hannan and Freeman, 1977; Aldrich, 1979). However, empirical evidence from the SDMP literature indicates that the main influence of the external environment is a moderating one, influencing the relationship between SDMP characteristics and outcomes, as opposed to being an antecedent of SDMP characteristics. However, few studies have modelled the external environment as an antecedent, and

the focus of most empirical research has been to include it as a contingency variable (Rajagopalan et al. 1993). The few empirical studies to compare the influence of the external environment to other contextual variables have found it is relatively less influential. Papadakis et al. (1998) report that whilst environmental heterogeneity had a negative influence on problem solving dissension, environmental dynamism and hostility did not significantly influence any of the SDMP characteristics. Similarly, Brouthers et al. (2000) conclude that the external environment is a less significant influence than TMT variables, and Elbanna and Child (2007b) found that environmental uncertainty and hostility explain less variance in rationality compared to SD specific characteristics and firm characteristics.

Despite the relatively limited support in the literature, a number of executives highlighted that the external environment did significantly shape the SDMPs of their organisations. In particular, one executive highlighted that the perceived level and pace of change influences the SDMP, suggesting that it may cause increased reliance on intuitive SDMPs:

"It's probably the pace of change because I think in some markets you know, you have to make … or you probably feel you have to make quicker decisions. Therefore they probably favour people who have a good gut instinct and have the confidence to rely on that."

Two other executives referred to the perceived level of hostility in the external environment, indicating this may lead them to favour a more rational or comprehensive approach to SDM:

"When you're in a tougher environment, it does make you think and analyse, and the decisions have to count."

"We now think we need more strategy and this is … yeah, this is based on the more difficult environment; and you indeed can spend your money only once. Use your money only once, and you

have to be very careful to really analyse which drug development will actually pay off... the more careful we have to be with spending our money."

However, somewhat contradictory to the above quotes, another executive was largely dismissive of the influence of the external environment on the characteristics of the SDMP:

"I think it's more about the experience of people and (their) decision-making really, to be honest. I don't think industries matter much."

Whilst the external environment is likely to influence the SDMP characteristics to some extent, empirical evidence indicates that it's influence may not be as strong as other contextual variables, and hence the following hypothesis is stated:

H3. External environmental variables will account for relatively less variance in SDMP characteristics, compared to the variance attributable to the TMT, SD specific characteristics, and firm characteristics.

4.3.4 The Firm Characteristics Perspective

Because TMTs have limited control over the forces of the external environment, this may result in the characteristics of the firm exerting a greater influence on the SDMP (Elbanna and Child, 2007b). Internal factors such as size, resources, past performance and external control exert a considerable influence on the SDMP by enabling or constraining certain processes (Papadakis et al. 1998). This is because such factors determine the nature of the information available to the TMT, shaping the way that they monitor and attend to the internal and external environment (Daft et al. 1988). Organisational factors also shape decision-makers' cognitions (Rajagopalan et al. 1997) which ultimately drive the process by which SDs are made. For instance severe resource constraints may

channel decision-makers towards more rational SDMPs, whereas slack resources may lead to satisficing and sub-optimal decision-making (Cyert and March, 1963; Bourgeois, 1981).

Empirical evidence also supports the view that firm characteristics significantly shape the SDMP. Elbanna and Child (2007b) found that firm characteristics (size and performance) explained more variance in rationality than both the external environment and SD specific characteristics. Papadakis (1995; 1998) found that the formal planning systems and past performance of organisations significantly shaped their SDMPs. Size also appears to be significantly related to comprehensiveness (Fredrickson and Iaquinto, 1989; Papadakis et al. 1998); whereas external and corporate control has also been found to influence the degree of rationality, comprehensiveness, and political behaviour in the SDMP (Dean and Sharfman, 1993a; Papadakis et al. 1998). Although direct measures of slack resources have rarely been utilised in the SDMP literature, as authors have favoured the use of performance as a proxy, Sharfman and Dean (1997a) found that slack resources resulted in organisations being more flexible in the SDMP. The influence of firm characteristics on the SDMP is supported by several of the interviews conducted with executives as part of the qualitative phase of the study.

With regards to performance, or the level of resources available to the organisation, one executive commented:

"A profitable organisation uses more analytics. For the simple fact that it can probably afford to pay the staff who are doing the analytics...I've seen this many times, businesses that are in red ink behave completely differently than businesses that are in black ink. When you're in red ink, it's as if nobody cares anymore you know, it's as if oh well, the game's lost I think you know, a lot of sensible controls and thoughts get thrown out of the window."

Another executive articulated how because of past performance, their SDMPs had become far more intuitive:

"Recently because we've been going through a very hard time over the last three years, I've tended to use intuition more to make decisions as to how we move forwards. I can only do what I feel is the right thing. Whereas in the past, say when things have been better, then I'm happy to go … you know, I'm more happy to go with the kind of analytical view. On the basis that if it goes wrong, it doesn't hurt so much."

An example of slack resources leading to sub-optimal decision-making was provided by a third executive:

"Until relatively recently, the only criteria we had for any major investment was a hurdle rate. So effectively we've got so much cash in the bank, any project that needs a hurdle rate … Rate of return you know, will almost certainly be approved. Because why wouldn't we? It's better doing that than having the cash sort of sitting there...whilst that's a nice position to be in, I don't think it makes for the best decisions you know because you don't always optimise and you'll take if you like, second-best decisions because you'll step over the line. I think when things are tougher, it does make you think and analyse, and the decisions have to count."

Finally, an executive highlighted how the levels of debt (often used as a measure of slack resources) significantly influenced their SDMP:

"The financial aspect is first and foremost because we've got debt...the way debt sits within the business does focus your mind. How you grow this business and what decisions you make. You won't suddenly make a load of rash decisions on the basis that suddenly you've got a load of cash. Where a business has got loads of cash it can afford to make loads of mistakes – we can't afford those mistakes because we don't have the cash to make those mistakes with."

The influence of firm size in determining whether the SDMP is rational or intuitive is also evident in the following quote from an executive who sits on the Board of Directors of both a small organisation and a large one:

"Would I take a decision purely on intuition? In smaller enterprises, in my own enterprise; yes, absolutely, because I'm also chairman of a smaller (organisation)...and in that you know, it's a company where we've got just over a hundred people, we're 18 months old and decisions are taken far more on gut-feel...in a big corporate you can't. There's no possibility."

Two executives suggested that the structures of large organisations inhibited intuitive SDMPs and promoted ostensibly more rational or comprehensive SDMPs:

"It's harder for large organisations to embrace it (intuitive SDMPs) because you've always got too many accountants around the place, if I'm quite honest, who you know, can almost do any set of analysis which will show that whatever you want to do is wrong. And they want certainty in terms of rates on return and all the rest of it."

"I do think when you get into large organisations where you've got a heavy reliance upon corporate governance... corporate governance will rise to the fore, to the extent that it stifles the business."

Also, several quotes from executives support the notion that external control, where there is a degree of control exerted on the firm by external actors (Dean and Sharfman, 1993a), can influence the SDMP because it constrains managerial discretion. The Managing Director of a large organisation owned by a French parent company indicated that such external control influenced both procedural rationality and political behaviour:

"Basically, anything that has the words 'joint venture' in it; anything that as the words 'new service' or 'new proposition' in it; or anything where the revenues are above certain levels and where for example parent company guarantees might be required is referred up to Group Board. And that's really just so I don't waste my time, because there's a chance of doing a whole load of work and somebody up there saying 'actually we're not interested'. So it's getting that sponsorship, getting that engagement and involvement in the concept... an important part of that is getting sponsorship and engagement from the Group Chief Exec and Group Strategy Director to support the process."

Similarly, other executive's highlighted how pervasive the impact of external control was on their SDM:

"In any strategic decision, I spend a lot of my time thinking about the key stakeholders: The board, the private equity house, the bank. Making sure that we deliver to their expectations."

"With a lot of our decisions there is an element that the bank control us in what we can and can't do... we have to tell them 'this is what we're going to do, this is how much money it's going to cost'...they'll want to see the plan."

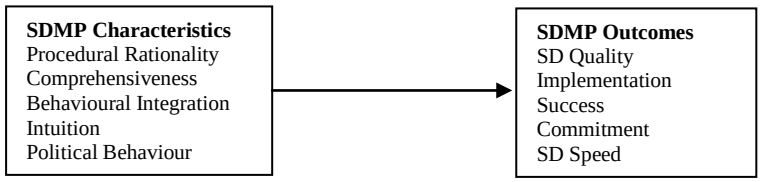
Therefore the structures, systems, and resources of an organisation enable or constrain its ability to respond to strategic issues, and hence the following hypothesis is stated:

H4. Firm characteristics will account for a significant amount of variance in SDMP characteristics, above and beyond the variance attributable to the TMT, SD specific characteristics, and the external environment.

4.4 Second Group of Hypotheses: The Effects of SDMP Characteristics on SDMP Outcomes

This section of the chapter addresses the second and third research questions, and develops hypotheses concerning the effects of SDMP characteristics on SDMP outcomes (see figure 4.4.1). Hypothesis 5 examines whether SDMP characteristics explain variance above and beyond the variance caused by contextual variables in each of the four dependent variables; SD quality, implementation success, commitment, and SD speed. Hypotheses 6.1-6.8 examine the individual influence of each of the SDMP characteristics on each of the four SDMP outcomes. Finally, Hypotheses 7.1-7.3 explore whether implementation success, commitment, and SD speed mediate the effects of SDMP characteristics on overall SD quality.

Figure 4.4.1 The Effects of SDMP Characteristics on SDMP Outcomes



Dean and Sharfman (1996) established that decision process matters because different decision processes lead to different strategic choices; and not all choices are equal. Some strategic choices turn out to be more, or less, successful than others (see figure 1.2 in chapter 1). Indeed, "the assumption that strategic outcomes stem from managerial actions is the very raison d'être of the field of strategic management" (Dean and Sharfman, 1996, p.368). Clearly, contextual variables retain a degree of influence on the overall success of an SD, because for instance, unexpected changes in customer demand or competitor actions can change the course of an SD from being a successful one, to one with disastrous consequences. However, it is clear that some decision-makers make catastrophic strategic choices, whilst others in very similar contexts make much more successful choices

(Bourgeois, 1984). Variations such as this would not occur if context alone determined the success of SDs. Whilst contextual variables evidently influence the effectiveness of an SD (Elbanna and Child, 2007a), it is unlikely that context entirely diminishes the impacts of strategic choices on the overall effectiveness of an SD (Dean and Sharfman, 1996). Decision-makers who collect and analyse information, and select strategic choices accordingly, should be more successful than those that do not because they will have more accurate perceptions of the viable options available to them and hence be able to more effectively align their organisations with the external environment (Dean and Sharfman, 1996). Such processes will also highlight relevant factors influencing the implementation of an SD, including resource requirements and potential obstacles, which can then be taken into account in advance. Furthermore, decision processes build or diminish motivation and procedural justice (Miller, 2008), and different decision processes have different implications for decision speed (Eisenhardt, 1989). In light of this, the following hypotheses are stated:

H5. SDMP characteristics will explain a significant amount of variance in (A) SD quality, (B) implementation success (C) commitment, and (D) SD speed, above and beyond the variance explained by the TMT, SD specific characteristics, the external environment, and firm characteristics.

4.4.1 Procedural Rationality and SDMP Outcomes

Rational SDMPs are more likely result in successful SDs owing to the careful and systematic scrutiny of information relevant to the decision. This should highlight potential barriers, problems, and hindrances to the initiative, such as competitor reactions, or internal resource constraints. Whilst there is relatively scant empirical evidence at the decision level, both Dean and Sharfman (1996) and Elbanna and Child (2007a) report a significant and positive relationship between rationality and SD effectiveness. Hence, when decision-makers systematically analyse information relevant to the decision and are able to screen out irrelevant distracting information, the decision is more likely to attain the objectives intended for it.

Prior studies have not examined the influence of decision process on implementation, despite several calls in the literature for a focus on implementation (e.g. Dean and Sharfman, 1996; Papadakis and Barwise, 1997c; Elbanna and Child, 2007a; Papadakis et al. 2010). Given that a rational SDMP is likely to not only focus on information pertaining to the external environment, but also to the internal environment of the firm itself it is likely to have a pervasive impact on implementation success. For instance, a rational SDMP is likely to identify any potential resistance to the SD internally and highlight resource requirements, organisational adaptations, and fall-back options; so as to maximise the prospects of the SD being implemented successfully. This is reflected in the following quote from a senior executive:

"You know, it's really easy to come up with ideas – actually the granular detail of, ok, great idea...how? Is one of the most important decisions you can make. So, in the case of this decision it was having a fall back – so, ok we've identified our preferred partner organisation, but actually let's have another two companies that we can talk to if something goes wrong. Because otherwise, if option one doesn't work you spend so much time chasing around to find option two that sometimes the opportunity has disappeared by the time you've done that. That also involves planning infrastructure and financial resource requirements...ideally you've built a bit of flex into the financial model so you can absorb any unknowns. But I think picking the right people in advance, not only in terms of technical skills but also in terms of behaviour and their ability to work as part of a team where things might shift quite quickly is quite important."

Because no strategic initiative is likely to succeed unless the decision-makers are committed to it, commitment is a key outcome of any SDMP. A lack of commitment amongst decision-makers is likely to give rise to cynicism and efforts to disrupt the SD (Guth and MacMillan, 1986). For the SD to ultimately be successful, decision-makers must achieve a level of commitment which is greater than simple consensus (Child, 1972). As Amason (1996, p.125) highlights "to effectively usher a decision through the complex web of operational details, team members must do much more than

simply agree to or comply with the decision. They must both understand and commit to the decision." However, there is a dearth of empirical evidence concerning the influence of SDMP characteristics on commitment, and none that has linked procedural rationality to the commitment of decision makers. Rational SDMPs are likely to build a sense of procedural justice amongst decision makers, because such processes will be largely transparent, and have a clear rationale underlying the SD with systematic analysis and evidence supporting it. Executives must have a clear understanding of the SD if they are to commit to it (Wooldridge and Floyd, 1990).

Finally, SD speed has been highlighted as vital for organisational performance in certain environments, such as those characterised by fast paced change (Bourgeois and Eisenhardt, 1988; Eisenhardt, 1989; Judge and Miller, 1991; Baum and Wally, 2003). One executive highlighted the importance of SD speed and commitment for achieving a competitive advantage in their industry:

"The basis of competition actually often has to be speed and in many cases it's how quickly you take the decision, and whether everybody sticks to it is almost more important than what decision you took."

Whilst Eisenhardt (1989) identified that successful firms were able to accelerate their SDMPs to cope with high environmental velocity, it remains unclear how different SDMP characteristics influence SD speed. Rational SDMPs may slow the pace of decision-making, because systematic gathering of information, filtering out of irrelevant information, and subsequent careful, detailed analysis is likely to be time consuming. As one executive highlighted below:

"If you've got time to do some analysis, yes but there will be times when you haven't got time to do it and events are … are you know, things are happening so quickly that you have to make a snap decision."

Therefore, with respect to the effects of procedural rationality on SDMP outcomes, the following hypotheses are stated:

H6.1. Procedural rationality will be positively related to (A) SD quality, (B) implementation success, and (C) commitment.

H6.2. Procedural rationality will be negatively related to SD speed.

4.4.2. Comprehensiveness and SDMP Outcomes

Whilst comprehensiveness has been found to affect organisational performance (Fredrickson, 1984; Bourgeois and Eisenhardt, 1988; Eisenhardt, 1989; Fredrickson and Iaquinto, 1989), the outcomes of comprehensiveness at the decision level have received considerably less empirical attention. A focus on organisational performance is problematic for two reasons; first there is a vast array of extraneous factors that influence it, and second, different decision processes are utilised according to the decision being made (Atuahene-Gima and Li, 2004). Hence, organisations may not have consistent SDMPs.

Despite the paucity of research examining comprehensiveness at the decision level, it is anticipated that higher quality SDs will result from decision-makers developing a number of different alternatives, taking into account multiple criteria, and undertaking extensive search activity. Such processes should yield several advantages, because decision-makers will gain greater insights concerning the external environment and internal context, which will in turn give them an enhanced understanding of the impacts of the options under consideration (Sniezek, 1992). Such an approach should also de-bias decision making, and prevent decision-makers falling victim to cognitive biases (Miller, 2008). A thorough scrutiny of the various strategic options available to the decision-makers should therefore result in a higher quality SD, and empirical evidence shows that comprehensiveness is positively associated with new product development outcomes (Atuahene-Gima and Li, 2004; Slotegraaf and Atuahene-Gima, 2011).

A thorough and exhaustive exploration of all possible decision options should also facilitate successful implementation, as strategic choices which are anticipated to be met with resistance or where resources may be lacking are unlikely to be pursued, or plans will be devised to overcome such constraints. One executive highlighted the importance of comprehensiveness for ensuring successful implementation:

"It was critical for us to think who are all of the potential partners? Have we got independent views of this market opportunity rather than just our own view? Have we assessed risk correctly? And that's risk in terms of not only financials, but also risks of getting the service right, things like how much of that risk can we off-set."

Furthermore, decision-makers are also more likely to be committed to SDs that are the product of comprehensive processes, because they will have explored all possible options, and thoroughly evaluated the criteria used to rule out certain options (Miller, 2008). Hence decision-makers will have a clear understanding of the rationale behind the initiative (Wooldridge and Floyd, 1990).

Whilst some organisations may have capabilities such as real time information systems (Eisenhardt, 1989) to enable the simultaneous consideration of multiple decision options, in general comprehensiveness it is likely to result in slow SDs. This is because comprehensiveness can cause decision-makers to become distracted by obsolete information which is not of central relevance to the SD, and because of bounded rationality; attempting to process all relevant information is likely to be inefficient. As one executive highlighted:

"*Time is a precious resource. There is simply not the time to analyse every decision—spending a week analysing an opportunity won't get you any further forward; there are diminishing returns on time invested."*

In conclusion, studies examining the relationship between comprehensiveness and decision level outcomes are severely lacking. However, the empirical evidence linking comprehensiveness to organisational performance and to new product development outcomes, together with the findings from the qualitative phase of data collection, leads to the following hypotheses:

H6.3. Comprehensiveness will be positively related to (A) SD quality, (B) implementation success, and (C) commitment.

H6.4. Comprehensiveness will be negatively related to SD speed.

4.4.3 Behavioural Integration and SDMP Outcomes

Behavioural integration is anticipated to result in high quality decisions because socially cohesive teams frequently exchange high quality information, and share with one another ideas that will lead to decisions which attain their objectives, and positively influence organisational performance. Empirical evidence shows that behavioural integration is negatively related to organisational decline (Carmeli and Schaubroeck, 2006) and enables organisations to simultaneously exploit existing competencies whilst exploring new opportunities (Lubatkin et al. 2006). Therefore, whilst behavioural integration has largely been overlooked by SDMP researchers, it has several advantages over constructs such as procedural rationality and comprehensiveness because these constructs focus solely on information analysis and evaluation, and neglect the social processes and interactions that occur between decision-makers. A focus on these complex behavioural aspects of SDM has the potential to explain a range of SDMP outcomes, such as overall decision quality but also commitment, implementation success and decision speed.

Behaviourally integrated TMTs address and debate information, resulting in a thorough assessment of the situation, precise definitions of problems, and a broad conceptualisation of alternative solutions. Thus, it is likely that behaviourally orientated TMTs will not only make higher quality SDs, but will

also be more committed to the decision because of how it was collectively derived (Carmeli and Schaubroeck, 2006). Behavioural integration should also lead to successful implementation because such processes foster a deep understanding of the situation, drawing upon the entire decision-making team's collective knowledge base, and such social mechanisms should foster trust and limit task conflict, thus ensuring the smooth execution of the initiative. Finally, behaviourally integrated decision-making teams are cohesive; the increased flexibility, open dialogue, and joint decision-making should result in speedy decisions because little time will be wasted disputing courses of action and resolving such disagreements. Smooth group processes are associated with speedy decision-making (Eisenhardt, 1989) because behaviourally integrated decision-makers share tasks—with decision-makers stepping in to support one another during especially fraught periods, thus minimising delays. Hence, the following hypothesis is stated:

H6.5. Behavioural integration will be positively related to (A) SD quality, (B) implementation success, (C) commitment, and (D) SD speed.

4.4.4 Intuition and SDMP Outcomes

Despite a burgeoning body of conceptual literature, there are relatively few empirical studies of intuition in the SDMP domain of literature. Furthermore, contradictory findings have emerged from these studies, with Khatri and Ng (2000) finding that intuition is positively related to organisational performance in an unstable environment, but negatively so in a stable environment. Elbanna and Child (2007a) found a non-significant relationship between intuition and SD effectiveness, and Elbanna et al. (2012) found that intuition was positively related to decision disturbance. Whilst these studies point towards intuitive SDMPs having negative implications for SDMP outcomes, the literature examining the implications of intuition in new product development suggest that intuition can positively influence the success of new product launches (Dayan and Di Benedetto, 2011; Dayan and Elbanna, 2011). SMEs with owner-managers with a preference for intuitive decision-making have also been found to perform better financially and non-financially than organisations with owner-

managers with more rational decision-making styles (Sadler-Smith, 2004). Furthermore, Bingham and Eisenhardt (2011) found that intuition plays a key role in the internationalisation process of small organisations. Hence, on the basis of this empirical evidence it is unclear whether intuition is likely to positively or negatively influence SDMP outcomes, and no study has examined the influence of intuition on important SDMP outcomes such as implementation success, commitment, and SD speed.

The qualitative phase of the study emphasised the central role of intuition in the making of SDs, which accords with the literature suggesting that intuition is an important part of SDM (Eisenhardt and Zbaracki, 1992; Hodgkinson et al. 2009; Salas et al. 2010). One executive described the ability of intuition to synthesise vast swathes of soft information, and emphasised its merits compared to procedural rationality:

"All too often people think that they can approach the development of strategy in some sort of mechanistic, formulaic way, where there'll be … you know, as long as you do sufficient research and you apply the mathematical models to it, you'll end up with some sort of algorithm which you can put into a computer and it then spits out what your strategy should be. And that's rubbish. You're looking for patterns, you're also absorbing influences I think from outside, probably a lot of the time in an unconscious way. You don't sit there and think I'm going to watch the news and see how this is going to influence my strategy or I'm going to read the newspaper or whatever… you just absorb information. And that goes somewhere … you park some of it in your brain somewhere and I'm presuming that when you start trying to make sense of X, Y and Z and actually come up with a plan, that steers your thinking and steers you in terms of considering options in a certain direction."

Two executives highlighted how intuition, procedural rationality and comprehensiveness are complementary processes used in SDM:

"I think there's always quite a lot of analysis but I think what happens with me is that there's always a gut-feel or intuition or whatever you like to call it and if it doesn't feel right, you kind of … you do more analysis. And normally you come across something that you find isn't quite right. And actually if you feel good about it, I think you probably … you either do maybe a bit less or if things aren't quite right, you then just … I think you think harder. So you know, I think you go with your gut instinct a lot and you actually learn to trust it more actually. I think I've learnt the longer I go on that if it just doesn't feel right, then it probably isn't. And if it does feel right, it probably is."

"In most cases we use intuition at the start and sort of the end of the process, as it were. Having the intuition upfront to really sort of say you know, is this worth spending a good slug of our time on? Because you know, we're a well-diversified company which means that time is of the essence. So we don't want to go through a detailed sort of analytical approach and (it's) never really going to be a starter or (there's) considerable risk in it. But likewise and I think this is the bit which is more likely to get missed is to actually then take a step back at the end and again, just to step away from the numbers and all the work that's been done and use that intuition to say 'well actually do we feel we are still convinced it makes sense?'"

However, in stark contrast to the above quotes, another executive expressed an altogether more cautious view of intuition, which in many ways reflects the mixed findings in the literature:

"Intuition should never be used thoroughly... I think that's a recipe for complete catastrophe... 'Sorry we went bust, it seemed like a good idea at the time'... the guys who tend to use intuition are gamblers... And you know, when you think about making a strategic decision, it's a gamble... but it's a big gamble. You're gambling with the assets of your company, you're gambling with the livelihoods of all of your employees. And I think you owe it to both of those groups and the shareholders to do a diligent job in making the decision, not basing it on 'well I think it looks like a good idea'."

Another executive highlighted the risk of intuition, and how it may bias decision-making (Schwenk, 1984):

"Another point would be mergers and acquisitions and I did eight years of mergers and acquisitions...And in those scenarios, you do all the reading you want but you have to suddenly make a call. The trick to that one is once you've done all the hard work and you've worked your (expletive) off for four months in the bid process, the danger is, does your intuition get clouded by (the fact that) you've done so much work you hate to see the thing go."

Whilst there is no empirical evidence upon which to hypothesise a relationship between intuition, commitment, and implementation success it is possible that intuitive SDMPs may result in a reduced level of commitment from other members of the TMT because of a lack of procedural justice (Wooldridge and Floyd, 1990). Other members of the TMT may not have had their opinions and preferences taken into consideration, or they may have been dismissed, and the decision taken based on one individual's intuitive judgment. Furthermore, the sources of intuition are often difficult to articulate (Sinclair et al. 2009) because intuitive judgments are based on a broad constellation of experience and learning, and the rationale for a decision may therefore be unclear to other TMT members. One executive highlighted how basing an SD on one person's intuitive judgment alone may be perceived as being unfair:

"You know, people that purely rely on their own gut-feel and fly in the face of any facts, evidence or whatever else are dangerous people. So you've got to have the balance. The more eyes that you have on it, so it's done in a fair and transparent way and with everybody trying to get the best outcome, with no axes to grind and all that, is the best way of doing it. Particularly if it's people with different skill sets from different areas of the business."

Furthermore, intuitive SDMPs may lead to critical implementation issues being overlooked, and these blind spots (Brouthers et al. 1998; Kahneman and Klein, 2010) will remain undetected without the use of rational or comprehensive SDMPs. Whilst intuition can be powerful for creative decisions (Dane and Pratt, 2009), it has much less utility when applied to detailed planning processes such as the implementation of an SD which entails the careful analysis of multiple internal and external constituencies such as employees, shareholders, suppliers, customers, competitors, and financial institutions. Schwenk (1984) suggests that intuition could result in restricted consideration of alternatives, biased use of evaluation criteria, and the inaccurate prediction of the consequences of the SD.

One area of consensus in the literature is that intuition enables speedy SDM, with Eisenhardt (1989) and Wally and Baum (1994) both finding that executives use intuition to speed up SDM. Because intuition is a non-conscious process, it enables almost instant judgments to be made (Hodgkinson et al. 2008; Sinclair, 2011).

Intuition clearly divides both academic and practitioner opinion, and it is unclear whether it can positively influence SDMP outcomes, with the exception of speed, where a significant and positive relationship is expected. Several conceptual articles (e.g. Dane and Pratt, 2007; Hodgkinson et al. 2009; Salas et al. 2010) and the social-psychology literature (e.g. Hodgkinson et al. 2008; Kahneman and Klein, 2009) highlight that for intuition to result in successful outcomes, it is contingent upon the level of expertise of the decision-maker, and the characteristics of the decision being made.

Whilst the third group of hypotheses of this study explore the moderating effects of contextual variables, the second set of hypotheses focus only on the direct effects of SDMP characteristics on SDMP outcomes. Hence, in the absence of expertise, intuition relies upon heuristics, or cognitive

biases, which are mental short-cuts and rules of thumb that serve to reduce the complexity of decision-making (Hodgkinson et al. 1999). Examples of heuristics used in SDM include illusion of control, where decision-makers over-estimate their ability to control outcomes; hindsight bias, where decision-makers see events that have already occurred as being more predictable than they were before they took place, and; law of small numbers where decision makers over-estimate the degree to which a small sample is representative of the population (Schwenk, 1988). Furthermore, if the SD is unfamiliar, then there will be an absence of valid cues for decision-makers (Kahneman & Klein, 2009). This may result in decision-makers mistakenly applying inappropriate solutions from prior, different strategic decisions. For example, the TMT may have significant expertise built up through frequently making acquisitions over a 10 year period—hence, an acquisition would be considered a familiar SD. However, when faced with a different type of SD, such as a significant capital investment decision, the knowledge and learning gained from the acquisitions may not lead to an optimal outcome when applied to a different type of SD.

Similarly, a TMT may have made frequent acquisitions over a ten year period and thus have considerable experience in making this type of SD. However, if they have not sought feedback nor thoroughly scrutinized the reasons for the successes or failures of those acquisitions they will not have developed true expertise. Hence when a TMT is faced with another acquisition decision, although it is a familiar SD, merely repeating what they have done previously may actually lead to an unsuccessful outcome.

In summary, it is likely to be the case that intuitive SDMPs may result in conclusions being formed prematurely, and important facts and details may be overlooked (Dean and Sharfman, 1996; Elbanna et al. 2012). As a consequence, intuitive SDMPs are likely to bear disastrous consequences for the quality of the decision and the success of its implementation. Furthermore, because not all aspects of the decision will have been debated and the rationale for the decision will not have been made explicit, the TMT are unlikely to be universally committed to the decision (Miller, 2008). However, intuition is rapid (Sinclair et al. 2009), and is likely to speed up the SDMP.

Therefore, not taking into account the possibility of the moderating influences of contextual variables, the following hypotheses are stated:

H6.6. Intuition will be negatively related to (A) SD quality, (B) implementation success, and (C) commitment.

H6.7. Intuition will be positively related to SD speed.

4.4.5 Political Behaviour and SDMP Outcomes

Empirical evidence indicates that political behaviour in the SDMP has negative consequences. Elbanna and Child (2007a) and Dean and Sharfman (1996) both found political behaviour to be negatively related to SD effectiveness, and Bourgeois and Eisenhardt (1988) and Eisenhardt and Bourgeois (1988) observed political behaviour resulting in poor organisational performance. This is because information gets distorted, restricted or even withheld (Pettigrew, 1973). Also, insufficient attention is paid to the external environment as political behaviour forces the SDMP to become inward looking (Dean and Sharfman, 1996), and it slows the SDMP as executives become distracted, which results in the loss of opportunities and first mover advantages (Eisenhardt, 1989; Pfeffer, 1992).

However, as discussed in chapter 2, there is an alternative perspective of political behaviour which suggests it may not be an altogether detrimental influence on SDs. Several authors have posited that political behaviour is an essential agent of change and adaptation in organisations, and has been described as "a kind of invisible underhand to promote a necessary change blocked by legitimate systems of influence" (Child et al. 2010, p.122). Thus it may be the case that a lively political process can stimulate the exchange of ideas, debate, and discussion which may positively influence SDMP outcomes. Miller (1997) highlights how political behaviour can ensure that an SD has the necessary backing to pave the way for successful implementation. Indeed, the qualitative phase of the study highlighted how political processes are essential for ensuring the ultimate success of an SD and for

gaining the commitment of key decision-makers, and facilitating successful and smooth implementation. This is illustrated in the following two quotes from two different executives:

"I've worked in British corporations for some time at board level, and I would say that in British-run corporations, decision-making is based on personal alliance. Everything is seen to be a deal and it's a question of you know, if I support you on project X, will you support me on project Y? So recently I had to take a strategic decision all the way through up to the board and that meant going through six levels of committees. Each committee member has to be personally lobbied ahead of each committee meeting. Each committee had its gatekeepers; you had to lobby not only the members of committees but you had to lobby the people who influence the members of the committees. And the idea of that style of process is that you've actually taken every individual's thoughts and worries out before you come to the final decision-making."

"The major issues you've got to deal with are firstly I guess politics: How do I pitch the idea? Who do I get engaged in the idea? Who's going to support me, who's going to object and why are they going to support or object? And try and deal with those issues early on. I knew that the Group Chief Exec would approach it on the basis of this is all terribly interesting, thank you for bringing us the opportunity but where else can I do this? We're a global business, what are the other geographies where this is appropriate? I had that bit of insight or bit of advice from somebody (who advised me to) just dealt with that one possible objection. So, how you frame the idea, how you frame it in terms of what our group strategy is and what specific issues people might have with it is really important. And then getting some sponsors on board at a very senior level—Group Board level—just through, you know, having some very informal conversations or getting your lobbying done, is very important."

There are therefore persuasive arguments in favour of, and against, political behaviour in the SDMP. For political behaviour to positively influence SD quality, implementation success and commitment it

is likely to be contingent upon the characteristics of the decision-makers. Child et al. (2010, p.127) highlight the nature of this possible contingency: "It depends on whether managers have the skills to handle conflict and political behaviour constructively so that it produces a diversity of arguments while preserving a collaborative culture. If they have such skills, active organizational politics may assist an organization to learn and adapt." However, whilst the third group of hypotheses of this study explore possible contingencies between process, context and outcomes, the second group of hypotheses focus on the direct effects of SDMP characteristics on SDMP outcomes. On the basis of the above discussion, the following hypothesis is stated:

H6.8. Political behaviour will be negatively related to (A) SD quality, (B) implementation success, (C) commitment, and (D) SD speed.

Prior research has focused almost exclusively on explaining the effects of important SDMP characteristics such as rationality and comprehensiveness, and certain contextual variables, on organisational performance or SD effectiveness (e.g. Fredrickson and Mitchell, 1984; Bourgeois and Eisenhardt, 1988; Eisenhardt, 1989; Priem et al. 1995; Dean and Sharfman, 1996; Goll and Rasheed, 1997; 2005; Elbanna and Child, 2007a;). However, this line of empirical enquiry has not yet been extended to include a broader range of outcome variables. Indeed, extant SDMP research is characterised by "the application of oversimplified models to a complex phenomenon" Elbanna and Child (2007a, p.431). As Papadakis and Barwise (1997c) argue, there are many other important and as yet unstudied, outcomes of the SDMP. Despite numerous calls in the literature for a focus on the implementation of SDs (e.g. Elbanna, 2006; Elbanna and Child, 2007a; Papadakis et al. 2010), these have remained unanswered. Dean and Sharfman (1996, p.391) emphasise that: "the strength and pervasiveness of its (implementation's) relationship with effectiveness suggest that further study may be warranted. At a minimum, implementation appears to have been largely overlooked as a managerial degree of freedom in influencing decision-making effectiveness."

SD formulation and implementation are inherently reflexive and iterative (Cespedes, 1991), and whilst the SDMP will undoubtedly involve the scrutiny of the external environment, such as customer demand and possible competitor reactions, equally important will be the analysis of the internal context and determining answers to questions such as: do we have the physical resources to implement this initiative? Do we need to raise finance? What incentives do we need to offer employees to successfully execute this initiative? Do we need to acquire, or partner with, a third party to gain access to markets or competencies? Careful appraisal of such considerations will enhance the likelihood of successful implementation, which in turn should lead to the decision achieving the objectives that management intended it to. It is highly unlikely that any SD could turn out to be effective, without its implementation having been successful. Hence it may be the case that SDMP characteristics influence SD quality not directly, but through implementation success. On this basis, the following hypothesis is presented:

H7.1. Implementation success will mediate the effects of SDMP characteristics on SD quality.

Similarly, whilst commitment has largely been overlooked as an outcome of the SDMP, it is likely to both be influenced by SDMP characteristics, and influence SD quality. An important aspect of the SDMP is to build commitment to the decision, because unless the TMT whole-heartedly buy-into and support an SD, it runs the risk of losing momentum or being sabotaged and hence never achieving the objectives intended of it (Amason, 1996; Miller, 2008). The SDMP can help to build commitment, by getting TMT members on-side, as emphasised in some of the executives' quotes in section 4.4.5 of this chapter. Furthermore, rational, comprehensive, and behaviourally integrated processes build a sense of procedural justice and all TMT members are able to see a defensible and objective rationale for the SD, thus enhancing their commitment to it (Wooldridge and Floyd, 1990). On this basis, the following hypothesis is presented:

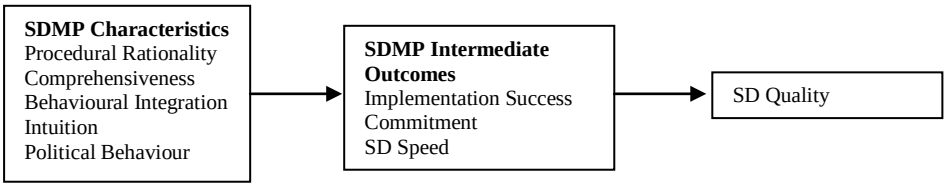
H7.2. Commitment will mediate the effects of SDMP characteristics on SD quality.

Finally, unless SDs are made quickly opportunities can be missed and first mover advantages surrendered, resulting in ineffective SDs. Empirical evidence suggests that the ability to make rapid SDs results in superior performance in high velocity environments (Eisenhardt, 1989; Judge and Miller, 1991). However, the implications of SD speed have not yet been studied at the decision level, and therefore, the following important empirical question remains unanswered: does fast decision-making result in higher quality decisions? It could be argued that rapid SDs pre-empt competitor actions, enabling organisations to seize opportunities thus enhancing the likelihood of the decision attaining its objectives (Judge and Miller, 1991). However, it may also be the case that fast SDs are made in haste and poorly conceived, thus resulting in ineffective SDs that fail to achieve their intended goals. On this basis the following hypothesis is presented:

H7.3. SD speed will mediate the effects of SDMP characteristics on SD quality.

Therefore, based on the above discussion it may be the case that SDMP characteristics exert only indirect effects on SD quality, and rather, SDMP characteristics directly influence implementation success, commitment, and SD speed (See figure 4.4.2). In turn these three outcomes then determine the overall quality of an SD.

Figure 4.4.2 Mediating Effects of Implementation Success, Commitment, and SD Speed on the Relationships between SDMP Characteristics and SD Quality



4.5 Third Group of Hypotheses: The Moderating Effects of Contextual Variables on the Relationships between SDMP Characteristics and Outcomes

Hart and Banbury (1994, p.256) state that researchers examining the relationships between process and outcomes "must examine or control for key contingency factors." Research that models SDMP characteristics as main predictor variables, and context as contingency variables, offers much greater explanatory capability for understanding the success or failure of SDs (Elbanna and Child, 2007a). Other than the external environment, few of the other contextual variables have featured in the literature as contingency variables, and the TMT have not featured at all as a moderator variable influencing the SDMP characteristics-outcomes relationship.

Whilst the number of variables influencing the overall success or failure of an SD is potentially vast (Dean and Sharfman, 1996), the present study carefully formulates and tests specific hypotheses derived from an exhaustive review of the SDMP and related literatures, such as social-psychology, and also draws upon the qualitative data gained from interviewing executives with direct experience of making SDs. Given the significant number of variables in the present study (5 SDMP characteristics, 4 SDMP outcomes, and 13 contextual variables) it is impractical to test every possible contingency relationship, and such a procedure would violate sample size requirements (Green, 1991). Therefore, it was decided to focus upon developing very specific hypotheses with a clear theoretical rationale, based on extant theory and data from the qualitative phase of data collection, rather than formulating speculative hypotheses with no theoretical underpinning. The remainder of this section addresses the fourth, fifth, and sixth research questions and articulates several hypotheses aimed at examining the moderating effects of context on the relationships between SDMP characteristics and SDMP outcomes. Section 4.5.1 examines the effects of intuition on SD quality, and how this relationship is subject to a three way interaction between intuition, SD familiarity and TMT expertise. Section 4.5.2 explores the moderating effects of environmental hostility-munificence on the relationships between intuition, procedural rationality and SD quality. Section 4.5.3 examines how

the effects of political behaviour on SD quality, implementation success, commitment, and speed are moderated by TMT expertise and TMT cognitive diversity. Finally, section 4.5.4 develops hypotheses concerning the relationship between SD speed and SD quality, and how this relationship is subject to the influence of environmental dynamism and environmental hostility-munificence.

4.5.1 The Relationship between Intuition and SD Quality: The Moderating Effects of TMT Expertise and SD Familiarity

Intuition has been described as a vitally important construct in SDMP research (Eisenhardt and Zbaracki, 1992) because it enables decision makers to make rapid, holistic associations and draw together disparate pieces of information non-consciously to provide a clear view of how to proceed with a particular decision (Dane and Pratt, 2007). Intuition, compared to procedural rationality has the advantages of requiring less resources and being fast; procedural rationality struggles to deal with discrepant information as it is troublesome to determine the weighting of such information (Bingham and Eisenhardt, 2011). Despite this the implications of intuition for SDMP outcomes, such as SD quality remain unclear; with some studies reporting positive consequences (e.g. Khatri and Ng, 2000; Dayan and Elbanna, 2011) and others reporting negative or insignificant effects (e.g. Elbanna and Child, 2007a; Elbanna et al. 2012). Given that intuition appears to be prevalent in the SDMP, enhancing our understanding of the conditions under which intuition can lead to successful outcomes should be a priority for theory development.

In order to ascertain the boundary conditions under which intuition can positively influence SDMP outcomes it was deemed essential to review the social-psychology literature, where a substantial body of research on the topic of intuitive decision processes exists. Hough and ogilvie (2005, p.418) emphasise this view and state that “to advance the field, we need more studies of strategic decision makers based on literature from psychology”. After reviewing the social-psychology literature (see chapters 2 and 3) it became evident that two conditions must be satisfied for intuition to produce

reliable and successful decisions: First the decision-makers must be experts in the domain, and the second is that the decision must be one which is familiar to the decision-makers.

"Expertise is at the root of effective intuitive decision making in complex organizational settings" (Salas et al, 2010, p. 942). Expertise is critical in determining whether the use of intuition in the SDMP will result in effective strategic decisions because experts have complex domain relevant schemas developed through extensive learning and experience (Hogarth, 2001). Complex domain relevant schemas contain "knowledge about a concept or type of stimulus, including its attributes and the relations among those attributes" (Fiske and Taylor, 1991, p. 98). Experts therefore have a large number of patterns stored in their long term memory (Simon, 1987). The complex domain relevant schemas of experts enables intuitive processes to rapidly detect important cues and match them to patterns that are stored in the long term memory (Dane and Pratt, 2007; Hodgkinson et al, 2008). Expertise is much more than simply experience, and "there are many examples of professionals with considerable experience who never become experts...At best, experience is an uncertain predictor of degree of expertise. At worst, experience reflects seniority—and little more" (Shanteau et al. 2002, p. 254).

Expertise does not derive from innate abilities; rather, it is the result of an individual acquiring complex skills and making physiological adaptations (Ericsson and Charness, 1994). No correlation has been found between IQ and expertise, as such; experts are made rather than born (Bloom, 1985; Ericsson et al. 2007). Research within the social-psychology and behavioural neuroscience domains of literature contends that complex skills and physiological adaptations are developed through deliberate practice (Chassy and Gobet, 2011). Deliberate practice is a type of practice whereby the individual undertakes tasks within a specific domain that are beyond their current level of competence and comfort (Ericsson et al, 2007). Ten years of repeated and intensive deliberate practice is generally considered to be the minimum time period required for expertise to develop (Simonton,

2006). The development of expertise also requires timely, accurate, and precise feedback so that the individual knows the results of their endeavours, and can make the necessary adaptations in order to improve future performance. Therefore, it is the combination of pro-longed exposure to a domain, deliberate practice, and exacting feedback that enables expertise to develop.

Furthermore, a major limitation which has been stated about SDMP research, is the so called "black box criticism" (Lawrence, 1997, p. 2). The "Black Box" criticism highlights that demographics, such as experience, commonly used in SDMP research are not an adequate proxy for the underlying cognitive traits and processes of the TMT (Priem et al.1999; Kiduff et al. 2000; Hough and ogilvie, 2005). Hambrick and Mason (1984, p. 204) state that: "demographic factors simply do not provide a reliable portrayal of a person's makeup. People are more complex than that." This further reinforces the need to measure the decision-makers' expertise rather than simply their experience. Hence, a rigorous statistical testing procedure, which is explained in detail in chapters 6 and 7, was followed to develop a valid and reliable measure of TMT expertise. The importance of expertise is highlighted in the following quotes from two different executives:

"The longer you've been in the game, the more you see things... having had experience of perhaps making a number of wrong decisions and seeing the consequences will also affect your thinking... the first thing is sort of understanding the field that we're playing in. The second thing is I suppose experience in actually making decisions and seeing them through, either rightly or wrongly."

"It's having a lot of different models in my head...I mean I've worked at senior levels for Virgin, Shell, Mercedes, and BMW—and a couple of smaller companies. I think the more models you've seen; the more reliable your intuition is going to be."

Expertise alone though will be insufficient for intuition to produce a high quality SD. The SD must also be a familiar one (Ericsson et al. 2007). The familiarity of an SD is defined as it's frequency of occurrence (Papadakis et al, 1998). The familiarity of an SD determines whether decision-makers are able to accurately identify cues and recognise the relationships between these cues, and subsequently match them to information stored in their long term memory in the timeframe required. Familiarity is an important component of several conceptualisations of intuition, including Simon's (1987, p. 63) notion of intuition as being analysis "frozen into habit", and intuition being the non-conscious and automatic application of rules and patterns that decision-makers have learnt (Hayashi, 2001). Therefore, familiarity determines the validity of the task environment (Kahneman and Klein, 2009) because familiar SDs are more likely to have predictable causal and statistical structures, which enhance the likelihood of decision-makers accurately being able to detect cues, match those to the patterns stored in their schema, and consequently formulate an effective response (Sadler-Smith and Shefy, 2004). Familiar SDs present a higher degree of predictability, which doesn't guarantee an effective intuitive response, but does enhance its likelihood (Kahneman and Klein, 2010). One executive highlighted the importance of familiarity for triggering an effective intuitive response:

"It's recognising that I'm facing something similar to what I have done before... You know, so you get in the mind-set that I'm just repeating what I did last time and that was successful and I'm not repeating what I did the other time when it was unsuccessful. So I think there's a sort of history bank of intuition."

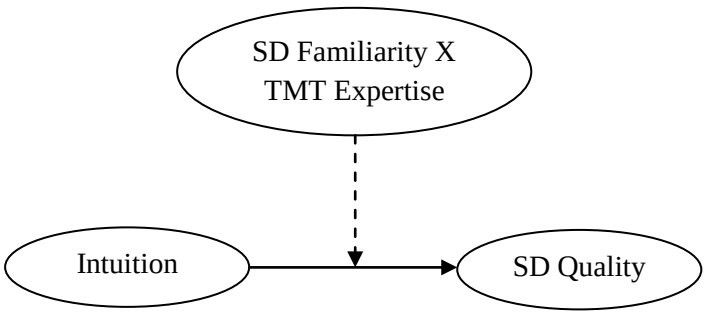
However, familiarity alone is insufficient for intuition to function accurately; it must be matched with TMT expertise. TMTs must have received accurate feedback and fully understood the reasons for prior success and failures and have extensive experience of facing challenging SDs (Hodgkinson et al. 2009; Salas et al. 2010). For example, a TMT may have made 20 acquisitions, each one an abject failure, and in each case not sought to learn the reasons behind the failure. When faced with another acquisition, this would be considered to be a familiar SD, but the TMT would evidently lack the

expertise to allow them to rely on intuition in order to make an effective decision. Similarly, expertise alone is insufficient to produce effective intuitive decisions because expertise is domain specific, and often experts don't know the boundaries of their expertise (Kahneman and Klein, 2010). Hence attempting to apply their expertise to a unique SD, which they have not faced before, would render intuitive processes less reliable. It is therefore the combination of TMT expertise and the familiarity of the SD that determines the effectiveness of intuitive SDMPs.

The interaction between intuition, SD familiarity, and TMT expertise is represented in figure 4.5.1, and on the basis of the above discussion, the following hypothesis is stated:

H8. There is a three-way interaction between intuition, SD familiarity and TMT expertise, such that there will be a positive relationship between intuition and SD quality when the SD is familiar and the TMT have expertise.

Figure 4.5.1. The Relationship between Intuition and SD Quality: The Moderating Effects of SD Familiarity and TMT Expertise



4.5.2 The Relationships between Intuition, Procedural Rationality, and SD Quality: The Moderating Effects of Environmental Hostility-Munificence

Munificent environments provide an abundance of critical resources and capacity required by organisations to prosper and grow, whereas in hostile environments competition is intense, and resources scarce (Aldrich, 1979; Dess and Beard, 1984; Castrogiovanni, 1991). The level of hostility-munificence influences a range of firm attributes including strategies, structures, and processes (Goll and Rasheed, 2005). Studies examining the effects of environmental hostility-munificence on the relationship between rationality and SDMP outcomes have produced conflicting findings; with Goll and Rasheed (1997; 2005) finding that rationality was more strongly associated with performance in munificent environments whereas Elbanna and Child (2007a) found that rationality was more strongly associated with SD effectiveness in hostile environments, whilst environmental hostility-munificence did not significantly interact with intuition or political behaviour. Intuition has also been found to significantly affect decision disturbance in hostile environments (Elbanna et al. 2012).

In munificent environments, sensing capabilities (Teece, 2007) are critical to ensure organisations respond to the vast array of opportunities present in such environments (Castrogiovanni, 1991). Intuition has a vital role to play in this, because of its ability to synthesise large quantities of information to evaluate an opportunity (Hodgkinson and Healey, 2011), and furthermore, it is able to do so rapidly which gives rise to first mover advantages (Eisenhardt, 1989). Organisations will be unable to pursue every available opportunity in munificent environments, and hence intuitive SDMPs can enable to the early detection of the most promising opportunities. Furthermore, rational SDMPs may struggle to cope in munificent environments and become overloaded by the welter of information pertaining to the multiple opportunities and resources at the firm's disposal (Hodgkinson and Healey, 2011). Finally, munificent environments present decision-makers with significant learning opportunities (Eisenhardt, 1989; Judge and Miller, 1991) to fine-tune their intuitive decision-making skills and build up the complex domain-relevant schemas required for intuition to function effectively

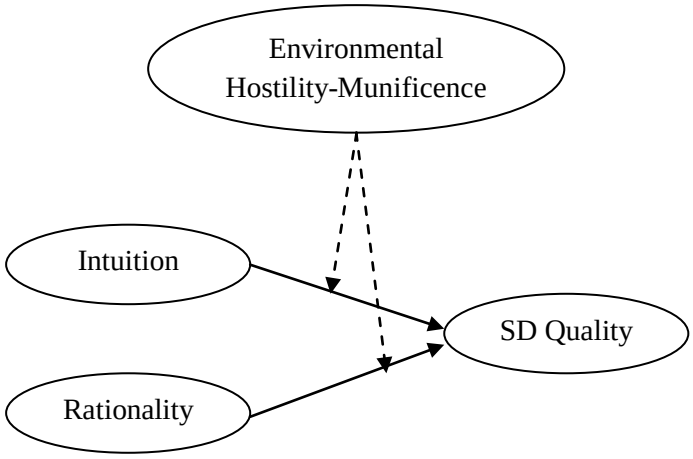
(Dane and Pratt, 2007). Hence in munificent environments, TMTs are likely to have gained far more expertise in SDM than compared to their counterparts in hostile environments with far fewer opportunities for growth. Munificent environments may provide a safer learning environment for executives to hone their intuition, because of the high levels of resources and growth opportunities that exist. This is in sharp contrast to hostile environments where one false move could result in the company's bankruptcy (Dean and Sharfman, 1993a).

In contrast, in hostile environments opportunities are scarce, and every strategic initiative has to be scrutinised diligently because one false move could mean the organisations un-doing, and in such environments organisations must devote greater resources to systematic analysis so as to master and understand how precisely to respond to opportunities and threats (Khandwalla, 1973). The collection and analysis of relevant information should help to ensure that organisations make the best possible use of very scarce resources in order to arrive at an optimal solution. Therefore, as shown in figure 4.5.2 and on the basis of the above discussion, the following hypotheses are stated:

H9.1. Environmental hostility-munificence moderates the negative relationship between intuition and SD quality, such that in high hostility environments the relationship is stronger.

H9.2. Environmental hostility-munificence moderates the positive relationship between procedural rationality and SD quality, such that in high hostility environments the relationship is stronger.

Figure 4.5.2 The Relationships between Intuition, Procedural Rationality, and SD Quality: The Moderating Effects of Environmental Hostility-Munificence



4.5.3 The Relationships between Political Behaviour, SD Quality, Implementation Success, Commitment, and SD Speed: The Moderating Effects of TMT Expertise and TMT Cognitive Diversity

Whilst extant research indicates that political behaviour negatively impacts on SDMP outcomes such as effectiveness and performance (Bourgeois and Eisenhardt, 1988; Eisenhardt and Bourgeois, 1988; Eisenhardt, 1989; Dean and Sharfman, 1996; Elbanna and Child, 2007a), examinations of these relationships have not accounted for the moderating influence of the TMT. This presents a considerable opportunity to develop theory given that the external environment, SD specific characteristics and firm characteristics have been shown to be significant moderators of the relationships between SDMP characteristics and SDMP outcomes (e.g. Covin et al. 2001; Elbanna and Child, 2007a). Child et al. (2010, p.131) state "the relationship between political behaviour and decision quality is not a simple one and more attention needs to be directed toward the role of the 'third factor' or moderating variables on this relationship."

The ability of TMTs to manage political behaviour and channel it in such a way that it results in higher quality SDs, more successful implementation, greater commitment and speed of the decision, is likely to be contingent upon the expertise of the decision makers. This is because expert decision-makers not only have considerable experience of SDM, but have had extensive feedback and hence understand how political behaviour may have contributed to the success of failure of previous SDs (Salas et al. 2010). Such expertise will equip decision-makers with the ability to skilfully deploy political behaviour; the benefits of which can be to ensure that the entire TMT is committed to the SD, through debating the decision and persuading dissenters of its merits in order to prevent it being sabotaged or executives dragging their feet (Wooldridge and Floyd, 1990). Expert decision-makers will also have learned the importance of tactfully lobbying individuals to gain their backing (Miller, 1997), to ensure that the necessary resources are allocated for successful implementation (Mintzberg, 1998), and to prevent the SD losing momentum (Child et al. 2010).

In summary, expert TMTs are more competent decision-makers (Ericsson, 2006) and hence are more likely to apprehend the importance of collaborative political behaviour, whereby "people will continue to support each other despite conflicts. Interests are asserted vigorously but securely, openly, and with win-win competition" (Simmers, 1998, p.38).

Novice decision-makers, by contrast, lack the competence to ensure that the adverse consequences of political behaviour are limited and the benefits maximised (Drory and Romm, 1998). Novice decision-makers are therefore more inclined to use competitive political behaviour (Simmers, 1998) to protect or strengthen their own position within the TMT and to promote the interests of their own function, as they will be blind to the detriment being caused to the organisation overall. Hence novice decision-makers using political behaviour are likely to be divisive; and SDs that are focused on achieving the objectives of individuals rather than the company as a whole are unlikely to positively contribute to the performance of the organisation (Eisenhardt and Bourgeois, 1988). Furthermore,

political SDMPs intended at advancing the interests of one, or a small group of TMT members, are likely to result in the other TMT members being uncommitted to the decision and prompt attempts to de-rail the implementation of the strategic initiative. Such SDMPs are also likely to result in delays caused by dissent and conflict (Eisenhardt and Zbaracki, 1992).

Therefore, whether political behaviour can positively influence SDMP outcomes "depends on whether managers have the skills to handle conflict and political behaviour constructively so that it produces a diversity of arguments while preserving a collaborative culture. If they have such skills, active organizational politics may assist an organization to learn and adapt" (Child et al. 2010). On the basis of the preceding discussion, the following hypotheses are stated:

H10.1. TMT expertise moderates the negative relationship between political behaviour and SD quality, such that when the TMT have expertise the relationship is weaker.

H10.2. TMT expertise moderates the negative relationship between political behaviour and implementation success, such that when the TMT have expertise the relationship is weaker.

H10.3. TMT expertise moderates the negative relationship between political behaviour and commitment, such that when the TMT have expertise the relationship is weaker.

H10.4. TMT expertise moderates the negative relationship between political behaviour and SD speed, such that when the TMT have expertise the relationship is weaker.

When the TMT is cognitively diverse, political behaviour is likely to be divisive and bear disastrous consequences for SDMP outcomes such as SD quality, implementation success, commitment, and speed (Olson et al. 2007b). Cognitively diverse TMTs have fundamentally differing beliefs concerning the strategic goals and priorities of the organisation (Miller et al. 1998), which results in reduced cohesion, infrequent communication, coordination problems, and aggressive, defensive

behaviours (Olson et al. 2007b). Hence when cognitive diversity is coupled with political behaviour, problems with communication and integration between team members will be exacerbated; resulting in a narrow range of alternatives being considered and diminished analysis of the decision (Miller et al. 1998).

Efforts to lobby other TMT members are unlikely to be successful, and any attempts at constructive debate will descend into hostile conflict. Certain TMT members will strongly disagree with the decision and hold completely opposing views, and during the political process these views are likely to get side-lined (Olson et al. 2007b). This will give rise to TMT members forming alliances with others sharing the same strategic beliefs, and attempting to control information deliberately in order to force through, or abandon, the decision (Dean and Sharfman, 1996). Those opposing the SD may attempt to disrupt, delay, and damage the decision (Woolridge and Floyd, 1990). As a consequence the implementation of the SD is unlikely to be successful as key information will have been withheld, manipulated and not shared between all TMT members, and TMT members will be uncommitted to the decision and instead attempt to slow its progress, or de-rail it entirely. On the basis of this argumentation, the following hypotheses are stated:

H10.5. TMT cognitive diversity moderates the negative relationship between political behaviour and SD quality, such that when the TMT are cognitively diverse the relationship is stronger.

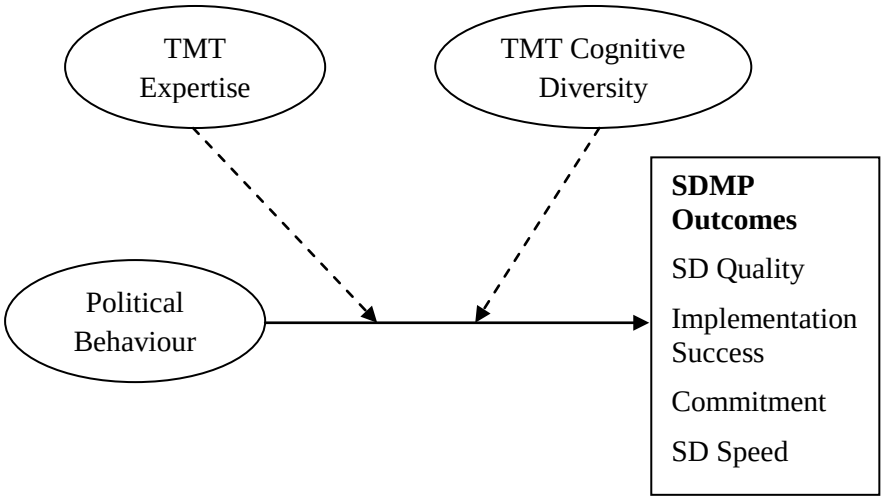
H10.6. TMT cognitive diversity moderates the negative relationship between political behaviour and implementation success, such that when the TMT are cognitively diverse the relationship is stronger.

H10.7. TMT cognitive diversity moderates the negative relationship between political behaviour and commitment, such that when the TMT are cognitively diverse the relationship is stronger.

H10.8 TMT cognitive diversity moderates the negative relationship between political behaviour and SD speed, such that when the TMT are cognitively diverse the relationship is stronger.

The relationships hypothesised in H10.1-H10.8, concerning the moderating effects of TMT expertise and cognitive diversity on the relationship between political behaviour and SDMP outcomes are represented in figure 4.5.3.

Figure 4.5.3 The Relationships between Political Behaviour, SD Quality, Implementation Success, Commitment, and SD Speed: The Moderating Effects of TMT Expertise and Cognitive Diversity



4.5.4 The Relationship between SD Speed and SD Quality: The Moderating Effects of Environmental Dynamism and Hostility-Munificence

Whilst SD speed positively impacts on organisational performance in dynamic and high velocity environments (Eisenhardt, 1989; Judge and Miller, 1991) it remains unclear how SD speed affects the overall quality of an SD in hostile environments, where resources are scarce and opportunities for growth are severely restricted (Castrogiavanni, 1991). No studies have been identified which examine the SD speed-SD quality relationship, as existing studies examining SD speed have been at the organisational level (e.g. Eisenhardt, 1989; Judge and Miller, 1991; Baum and Wally, 2003; Clark and Maggitti, 2012). Judge and Miller (1991) suggest that making rapid SDs in high velocity results in

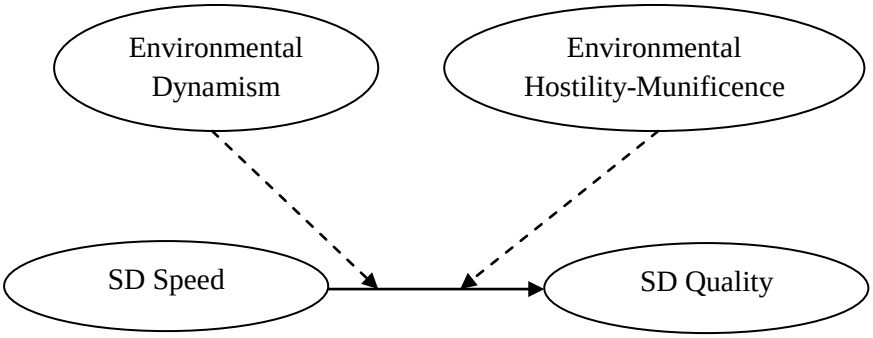
TMTs learning quickly what works and what doesn't work in the SDMP, and such learning can be utilised in future decisions to improve their effectiveness. However, it may be the case that in other environments, such as hostile ones, growth opportunities are likely to be far more restricted and hence TMTs do not have the same frequent opportunities for learning, and do not progress to become as competent decision-makers as those frequently making SDs.

Furthermore, in hostile environments, which are dangerous and threatening (Miller and Friesen, 1983) SDs have to be made with great caution and care because an ineffective SD could be disastrous to the firm (Dean and Sharfman, 1993a). Also, in hostile environments opportunities to rectify an ineffective SD may be a long time in arriving and as such every SD must be thoroughly scrutinised and understood prior to its implementation. A decision made rapidly, particularly in an environment where decision-makers have had limited opportunities for learning, may lead to erratic SDs (Mitchell et al. 2011) which fail to achieve their intended objectives. However, in dynamic environments where opportunities arrive frequently owing to the fast pace of change in customers, competitors and technologies (Dess and Beard, 1984), opportunities for learning are far greater (Eisenhardt, 1989). Furthermore, in dynamic environments decision speed is vital because "opportunities move quickly, and once a firm is behind, it is difficult to catch up" (Eisenhardt, 1989, p.570). Hence, on the basis of this discussion, the following hypotheses are stated (as shown in figure 4.5.4):

H11.1 Environmental dynamism moderates the positive relationship between SD speed and SD quality, such that when the environment is dynamic the relationship is stronger

H11.2 Environmental hostility-munificence moderates the positive relationship between SD speed and SD quality, such that when the environment is hostile the relationship is weaker

Figure 4.5.4 The Relationship between SD speed and SD Quality: The Moderating Effects of Environmental Dynamism and Hostility-Munificence



4.6. Summary

This chapter has built upon the previous two chapters and explicated a conceptual model and series of hypotheses (see table 4.6 for a summary). The conceptual model and hypotheses presented in this chapter are based on a thorough review of the literature and an exploratory qualitative phase of data collection. The hypotheses address important priorities for theory development in the SDMP domain of literature, which include: a multi-dimensional conceptual model which incorporates both synoptic-formal and political-incremental perspectives; a multi-theoretic model of the SDMP to test the relative importance of each theoretical perspective for explaining the characteristics of the SDMP; a focus on intuition, and the boundary conditions for intuition to positively influence SDMP outcomes; multiple SDMP outcomes; contextual variables, including TMT variables, as moderators of the SDMP characteristics-outcomes relationships, and finally; the use of psychometric variables as opposed to demographic proxies to capture TMT variables. The main research questions that this study seeks to address have also been stated, and are summarised as follows:

1. Which theoretical perspectives out of the TMT, SD specific characteristics, the external environment, and firm characteristics have the most significant influence on the characteristics of the SDMP?

2. What are the effects of the different SDMP characteristics on SDMP outcomes; not just SD quality, but also implementation success, commitment, and SD speed?

3. Do implementation success, commitment, and SD speed mediate the effects of context and SDMP characteristics on SD quality?

4. What are the boundary conditions for intuition to significantly and positively influence SD quality?

5. What are the moderating effects of the TMT on the relationships between political behaviour and SDMP outcomes?

6. What are the moderating effects of the external environment on the relationship between SD speed and SD quality?

Also, three groups of hypotheses have been stated; section 4.3 outlined the first group of hypotheses, relating to the multi-theoretic contextual influences on the characteristics of the SDMP. Section 4.4 explicated hypotheses concerning the effects of SDMP characteristics on SDMP outcomes, and in section 4.5 hypotheses were presented concerning the moderating influence of contextual variables on the relationships between SDMP characteristics and SDMP outcomes.

Having reviewed the SDMP literature and stated a series of hypotheses together with a conceptual model, the next chapter, chapter 5, addresses the methodological considerations of the present study. In doing so chapter 5 describes in detail the research design and methodology utilised to test the hypotheses presented in this chapter. Operationalisations of all variables to be tested are presented, and the instrument of administration, the questionnaire, is discussed in depth. The questionnaire pre-testing is also discussed, as well as the administration of the main questionnaire, and responses are described with regards to methodological issues such as non-response bias.

Table 4.6. Summary of Hypotheses

Hypothesis Number	Hypothesis
First Group of Hypotheses: Multi-Theoretic Influences on SDMP Characteristics	
H1.	TMT variables will account for a significant amount of variance in SDMP characteristics, above and beyond the variance attributable to SD specific characteristics, the external environment, and firm characteristics.
H2.	SD specific characteristics will account for a significant amount of variance in SDMP characteristics, above and beyond the variance attributable to the TMT, the external environment, and firm characteristics.
H3.	External environmental variables will account for relatively less variance in SDMP characteristics, compared to the variance attributable to the TMT, SD specific characteristics, and firm characteristics.
H4.	Firm characteristics will account for a significant amount of variance in SDMP characteristics, above and beyond the variance attributable to the TMT, SD specific characteristics, and the external environment.
Second Group of Hypotheses: The Effects of SDMP Characteristics on SDMP Outcomes	
H5.	SDMP characteristics will explain a significant amount of variance in (A) SD quality, (B) implementation success, (C) commitment, and (D) SD speed, above and beyond the variance explained by the TMT, SD specific characteristics, the external environment, and firm characteristics.
H6.1.	Procedural rationality will be positively related to (A) SD quality, (B) implementation success, and (C) commitment.
H6.2.	Procedural rationality will be negatively related to SD speed.
H6.3.	Comprehensiveness will be positively related to (A) SD quality, (B) implementation success, and (C) commitment.
H6.4.	Comprehensiveness will be negatively related to SD speed.
H6.5.	Behavioural integration will be positively related to (A) SD quality, (B) implementation success, (C) commitment, and (D) SD speed.
H6.6.	Intuition will be negatively related to (A) SD quality, (B) implementation success, and (C) commitment.
H6.7	Intuition will be positively related to SD speed.
H6.8.	Political behaviour will be negatively related to (A) SD quality, (B) implementation success, (C) commitment, and (D) SD speed.
H7.1.	Implementation success will mediate the effects of SDMP characteristics on SD quality.
H7.2.	Commitment will mediate the effects of SDMP characteristics on SD quality.
H7.3.	SD speed will mediate the effects of SDMP characteristics on SD quality.
Third Group of Hypotheses: The Moderating Effects of Contextual Variables on the Relationships Between SDMP Characteristics and Outcomes	
H8.	There is a three-way interaction between intuition, SD familiarity and TMT expertise, such that there will be a positive relationship between intuition and SD quality when the SD is familiar and the TMT have expertise.
H9.1.	Environmental hostility-munificence moderates the negative relationship between intuition and SD quality, such that in high hostility environments the relationship is stronger.
H9.2.	Environmental hostility-munificence moderates the positive relationship between procedural rationality and SD quality, such that in high hostility environments the relationship is stronger.
H10.1.	TMT expertise moderates the negative relationship between political behaviour and SD quality, such that when the TMT have expertise the relationship is weaker.

Hypothesis Number	Hypothesis
H10.2.	TMT expertise moderates the negative relationship between political behaviour and implementation success, such that when the TMT have expertise the relationship is weaker.
H10.3.	TMT expertise moderates the negative relationship between political behaviour and commitment, such that when the TMT have expertise the relationship is weaker.
H10.4.	TMT expertise moderates the negative relationship between political behaviour and SD speed, such that when the TMT have expertise, the negative relationship is weaker.
H10.5.	TMT cognitive diversity moderates the negative relationship between political behaviour and SD quality, such that when the TMT are cognitively diverse the relationship is stronger.
H10.6.	TMT cognitive diversity moderates the negative relationship between political behaviour and implementation success, such that when the TMT are cognitively diverse the relationship is stronger.
H10.7.	TMT cognitive diversity moderates the negative relationship between political behaviour and commitment, such that when the TMT are cognitively diverse the relationship is stronger.
H10.8.	TMT cognitive diversity moderates the negative relationship between political behaviour and SD speed, such that when the TMT are cognitively diverse the relationship is stronger.
H11.1.	Environmental dynamism moderates the positive relationship between SD speed and SD quality, such that when the environment is dynamic the relationship is stronger.
H11.2.	Environmental hostility-munificence moderates the positive relationship between SD speed and SD quality, such that when the environment is hostile the relationship is weaker.

CHAPTER 5 - METHODOLOGY

5.1 Introduction

The previous chapters have explicated the theoretical foundations of the conceptual model. This chapter provides an in-depth discussion of the methods used in this study to examine the conceptual model and hypotheses detailed in chapter 4.

Churchill and Iacobucci (2005) state that the research process comprises a number of different stages, which include:

1. Formulate the problem;

2. Determine the research design;

3. Design the data collection method;

4. Design the sample and collect the data;

5. Analyse and interpret the data, and;

6. Prepare the research report

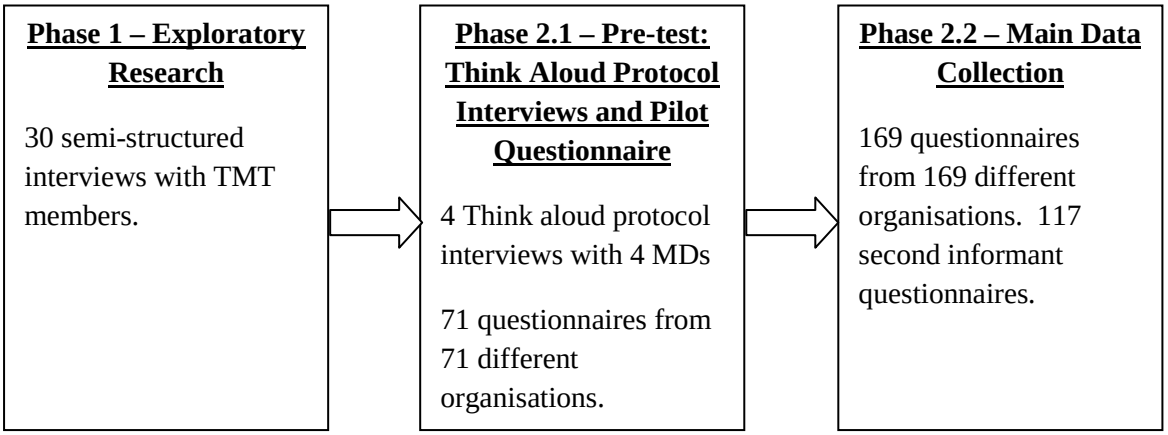
Whilst other authors have suggested more stages (e.g. Mooi and Sarstedt, 2011) and fewer stages (Chisnall, 2001) to the research process, such differences are largely semantic, and the broad stages are distinctly similar across research methodology texts. For the current study, Churchill and Iacobucci's (2005) six stages stated above will be utilised. Stage one has been addressed already, in chapters one to four. The current chapter addresses stages two, three, and four; as stages five and six are dealt with in subsequent chapters. Section 5.2 provides an overview of the research design, section 5.3 discusses the various data collection methods considered, and 5.4 details the sample selection procedures. Section 5.5 describes how the constructs were operationalised, section 5.6

details the questionnaire design process, and section 5.7 outlines the pre-testing procedures. Sections 5.8 and 5.9 outline the main data collection procedures and analysis techniques, and finally, section 5.10 provides a summary of the chapter.

5.2 Research Design

A research design is "the framework or plan for a study, used as a guide to collect and analyze data" (Churchill and Iacobucci, 2005, p.74). Research designs are fundamentally concerned with how to observe variance in focal variables whilst stopping variation in extraneous ones (Lee and Lings, 2008). Research designs should ultimately be determined by the nature of the research questions, although the philosophical perspective of the researcher is also likely to be an important factor influencing research design (Lee and Lings, 2008). There are a number of different research design frameworks which can be classified into three main types: (i) exploratory; (ii) descriptive, and; (iii) causal (Churchill and Iacobucci, 2005). The present study adopts a multi-method field study approach (Snow and Thomas, 1994) (see figure 5.2) utilising both exploratory and descriptive research designs. This section provides a discussion of the three types of research design, and a justification of the approach followed in the present study.

Figure 5.2 Data Collection Approach



5.2.1 Exploratory Research

The main purpose of exploratory research is to generate insights and ideas concerning the phenomenon of interest, and to formulate research problems more precisely (Mooi and Sarstedt, 2011). Exploratory research is especially applicable in the early stages of a research project and for problems about which little is known (Churchill and Iacobucci, 2005; Saunders et al. 2009). In such cases, extensive preliminary exploratory work is required to develop an understanding of the research problem prior to formulating hypotheses. Therefore, an exploratory stage of research was considered essential for the current study, prior to formulating hypotheses, in light of the following:

1. Inconsistent and contradictory findings from existing SDMP research (Papadakis et al. 2010);

2. Inconsistency in the level of analysis adopted;

3. A paucity of research examining intuition in the SDMP (Elbanna et al. 2012);

4. Inconsistent findings concerning the effects of contextual variables on the SDMP;

5. With the exception of the Bradford Studies (Hickson et al. 1986; 2001), most SDMP research being conducted in a non-UK setting, and;

6. No existing scale was identified during the literature search to measure TMT expertise.

As recommended by Churchill and Iacobucci (2005) and Mooi and Sarstedt (2011), the exploratory stage of the study was used for the following objectives:

1. Clarifying concepts;

2. Measure development;

3. Formulate hypotheses, and;

4. Discern the practical problems of carrying out the research.

Chapter seven illustrates how objectives one and two were achieved through the exploratory phase of research, as the concept of TMT expertise was scrutinised, and items generated for its measurement. Chapter four of this thesis has also demonstrated how important the exploratory phase was for formulating hypotheses. Furthermore, the exploratory phase identified practical problems associated with conducting research with senior executives concerning highly confidential matters such as SDM. Such practical problems included the need to minimise the length of any survey, and make use of objective secondary data, because it was apparent that senior executives would have very limited time available for completing research surveys. Furthermore, it was clear that confidentiality was extremely important to the participants, and when communicating with participants during the administration of the survey it would be vitally important to assure them of confidentiality. The exploratory phase of research was also helpful for interpreting the results of the study, as discussed in chapter 9. Finally, because there is a potentially vast number of contextual variables that influence the SDMP it is simply impractical to include them all in any one study (Elbanna, 2010). Hence, a major benefit of the exploratory study was that it enabled the identification of the most salient contextual variables. Indeed, one of the most prominent contextual variables discussed by participants was TMT expertise, whereas other contextual variables, such as TMT demographics were not mentioned at all by the participants.

Exploratory research can take one of many different forms, namely; a literature search, experience survey, case analysis, focus groups, interviews, projective techniques, and observational techniques (Churchill and Iacobucci, 2005). As well as a literature search, semi-structured interviews were conducted because of their ability to derive deep and rich descriptions, and because of their flexibility—the respondent's answers determine the subsequent line of questioning (Churchill and Iacobucci, 2005). Semi-structured interviews (as opposed to unstructured interviews) were undertaken because it was possible to obtain a clear theoretical appreciation of the topic from the relatively large body of SDMP literature. A degree of structure was also necessary to make the interviews comparable. Interviews were conducted with senior executives until theoretical saturation

was reached, and each new case failed to provide any new insights (Lee and Lings, 2008). This was attained after 30 interviews. Purposive sampling was used, where respondents were selected on the basis of their relevance to the research questions (Lee and Lings, 2008)—this meant that it was essential to interview senior executives with significant direct experience of making SDs. Because of the inherent difficulties with conducting research amongst managerial elites (Pettigrew, 1992), participants for the exploratory phase of research were selected on the basis of where a sponsor could provide access. Sponsorship convinces prospective participants to cooperate by convincing them of a study's legitimacy and value (Papadakis, 1993), and the following sponsors facilitated introductions to relevant prospective participants:

- Academic members of staff with industry contacts;
- Non-academic members of staff with industry contacts (e.g. the university alumni and marketing department, and the university executive team) and;
- Industry contacts known to the researcher personally, or known to close friends and relatives.

Data was analysed according to the Miles and Huberman (1994) approach of using logic and matrix analysis. All of the interviews were recorded, having first sought the permission of the interviewee, and professionally transcribed. QSR NVivo 9 software was used to code the interview text and develop within and cross-case displays. Codes were allocated to interview text where a respondent mentioned SDMP characteristics, context, or SDMP outcomes. Networks (diagrams) and matrices (tables) were used to represent the relationships and themes that emerged. A total of 30 within-case displays were then summarised and aggregated in the form of one cross-case display. Because of the exploratory nature of the research, codes utilised for the within-case displays were then adapted for the cross-case display to enable a consistent and literature-based terminology (Nemkova et al. 2012). The main findings from this exploratory phase of qualitative work are presented in chapter 4, and were used to assist with the development of hypotheses to be tested with the main data collection. Table 5.2.1 describes the participants in the exploratory phase of research.

Table 5.2.1 Descriptions of Participants in the Exploratory Phase of the Research

Descriptor	**Number**
Job Title	
Chief Executive Officer	8
Managing Director	7
Chairman	4
Chief Finance Officer/Finance Director	3
Chief Operating Officer	2
Commercial Director	3
Director	3
TOTAL	**30**
Sector	
Manufacturing	9
Services	21
TOTAL	**30**
Size	
Medium (50-250 employees)[1]	16
Large (>250 employees)	14
TOTAL	**30**

[1] Using the EC categorisation of company sizes. Source: European Commission—Enterprise and Industry. What is an SME? Available at: <http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/sme-definition/> [Accessed 2 July, 2013].

In terms of job titles, the profile of the participants is broadly consistent with prior research in the SDMP domain of literature which has utilised TMT members such as Chief Officers and Directors instead of focusing solely on CEOs (e.g. Dean and Sharfman, 1993a; 1996; Elbanna and Child, 2007a; 2007b; Goll and Rasheed, 2005; Hitt and Tyler, 1991; Shrivastava and Grant, 1985). Prior SDMP studies have focused on the manufacturing sector (e.g. Elbanna et al. 2007a; 2007b; Dean and Sharfman, 1993a; 1996; Goll and Rasheed, 2005; Papadakis et al. 1998). However, given the importance of the service sector to the UK and many other economies (Papadakis et al. 2010), it was decided that a focus on both manufacturing and service sectors was required so as to maximise the generalisability of the findings. Because few existing SDMP studies have sampled service sector firms, a larger number of respondents from service sector organisations were interviewed. However, there were no discernible differences in the pattern of responses from service sector respondents compared to manufacturing sector respondents.

The remainder of this chapter and thesis is focused on explaining the design, analysis, and findings from the main data collection, which utilised a quantitative, survey-based methodology.

5.2.2 Descriptive Research

Descriptive research is focused on "determining the frequency with which something occurs or the relationship between two variables. The descriptive study is typically guided by an initial hypothesis" (Churchill and Iacobucci, 2005, p.74). Descriptive research builds upon the exploratory qualitative work undertaken, because to be able to measure a phenomenon of interest, it must first be thoroughly understood (Mooi and Sarstedt, 2011). Unlike exploratory research, descriptive research is more clearly specified and guided by boundaries. Descriptive research designs are either cross-sectional or longitudinal. Cross-sectional research designs utilise samples that are representative of the entire population, and collect data at a certain point in time. Longitudinal studies use panels and draw data from a fixed sample at multiple points in time (Lee and Lings, 2008). It should be noted that

descriptive research does not explain causality between variables, only their relationships (Webb, 2001). The main focus of the current study is upon examining the hypotheses presented in chapter 4, and the relationships between the variables of interest. Hence a descriptive design is primarily adopted for the present study.

5.2.3 Causal Research

Causal research is "concerned with determining cause-and-effect relationships" (Churchill and Iacobucci, 2005), and this is achieved primarily through experimental research designs. Causal research is therefore concerned with the relationship between an event (the cause) and a second event (the effect), and to claim causality four conditions must be met (Mooi and Sarstedt, 2011):

1. The two variables must be related to one another (correlation);

2. The cause must come before the effect;

3. Other factors must be controlled for, and;

4. There must be a good explanatory theory.

5.2.4 Summary of Research Design

Three research designs have been presented: (i) exploratory research; (ii) descriptive research, and (iii) causal research. It is argued that these three designs are complementary and should not be considered to be mutually exclusive. The approach adopted in the current study is to utilise both exploratory and descriptive approaches. An exploratory stage was essential in order to clarify concepts, develop a measure, formulate hypotheses, and to identify potential problems that may be faced when conducting the descriptive stage. A descriptive stage is also required because the hypotheses formulated in chapter 4 are the main focus of the present study, and these hypotheses are concerned with establishing relationships between variables and the frequency of occurrence.

Because of the strict conditions for causality to exist (Mooi and Sarstedt, 2011), the present study makes only tentative claims of causality due to the inherent limitations of a cross-sectional survey design (Rindfleisch et al. 2008), and this is discussed further in the limitations section of chapter 9.

5.3 Overview of Data Collection Methods

This section provides an overview of the different data collection methods available to SDMP researchers, and presents a justification for the approach taken in the present study.

Primary research data can be collected through either observation techniques (observing and recording facts and behaviours) or through communication (e.g. questionnaires, interviews). The SDMP could be investigated by using observation techniques (e.g. examining internal documents such as emails and reports relating to an SD) (Mintzberg et al. 1976), however this study adopted the communication approach, utilising questionnaires and interviews. The rationale for doing so is because:

1. The communication method is versatile, and information pertaining to a respondent's attitudes and opinions, awareness and knowledge, motivations and actions, as well as behaviours, can all be obtained by the communication method (Churchill and Iacobucci, 2005). Observation by contrast is much more limited, and there are issues concerning the accuracy of observations. Furthermore, direct observation of past events is impossible, meaning that access would have to be granted to enable the researcher to observe TMTs making SDs (e.g. attending meetings) which would be impractical given the confidential nature of SDM and senior executives' sensitivity to the subject (Elbanna, 2010).

2. Investigating organisational records is problematic because often SDs have little or no trace and many SDs are often not formally documented (Mintzberg et al. 1976). Whilst some SDMP research has combined the communication method with inspecting organisational documents (e.g. Eisenhardt

and Bourgeois, 1988; Papadakis et al. 1998), these studies have drawn upon relatively small samples of organisations. Furthermore, from the exploratory phases of the present study, it was clear that respondents would object to the intrusive nature of such requests for highly confidential information. Such an approach may have resulted in a severely reduced sample size, and given the need for large samples (Papadakis and Barwise, 1997c); attempts to incorporate observation methods into the present study were not made.

3. A major drawback of observation methods is the time and cost involved (Churchill and Iacobucci, 2005). Such considerations are especially pertinent in the context of SDM because the researcher may spend a considerable amount of time idle waiting for an event to happen, and even when an SDMP commences, it can span several years. Furthermore, it can be argued that many SDMP characteristics such as intuition and political behaviour cannot be directly observed—many political actions are hidden (e.g. the hiding and distorting of information) (Dean and Sharfman, 1996).

Therefore, the present study adopts the communication approach to primary data collection, comprising an exploratory phase which used semi-structured interviews, and a subsequent descriptive phase which utilised a questionnaire. This multi-method field study approach (Snow and Thomas, 1994) was considered to have several advantages over laboratory-based studies. Most importantly, laboratory-based studies are an artificial context (Schwenk, 1995), and it is very difficult to recreate the complex context in which the SDMP takes place in a laboratory. Furthermore, SDM laboratory studies lack external validity unless they utilise senior executives (Schwenk, 1995). Lee and Lings (2008) state that laboratory-based experiments are ill suited for research with multiple independent and dependent variables, because each additional variable greatly enhances the technical and practical difficulty of the design. Hence, given the inability of laboratory-based studies to re-create the context in which SDMPs take place, and given the impracticality of recruiting a sufficiently large number of

senior executives to participate in a laboratory study, this approach was discarded in favour of the multi-method field study approach.

The exploratory stage of the data collection took place between September 2011 and November 2011. A pilot study was conducted between April 2012 and June 2012, where 71 questionnaires were collected concerning a single recent SD made by the organisation (hence, there were 71 different SDs from 71 different organisations). Finally, the main data collection took place between September 2012 and December 2012, where 169 fully useable questionnaires were collected. Each questionnaire related to one recent SD made by the organisation (hence there were 169 different SDs from 169 different organisations). Furthermore, for 117 of the questionnaires (69%) a subsequent questionnaire was obtained from a second informant who had significant involvement in the same SD.

5.3.1 Longitudinal and Cross-Sectional Data Collection

A cross-sectional design "entails the collection of data on more than one case (usually quite a lot more than one) and at a single point in time in order to collect a body of quantitative or quantifiable data in connection with two or more variables (usually many more than two), which are then examined to detect patterns of association" (Bryman et al. 2008). Longitudinal research designs examine a panel of samples at multiple points in time, and this approach has been criticised because of the cost, time involved and lack of representativeness (Churchill and Iacobucci, 2005). Furthermore, a PhD programme typically allows approximately 12-18 months for data collection. Hence conducting both an exploratory stage of research and a longitudinal study of SDs—which often take a considerable amount of time (sometimes several years) before their outcomes are known, was considered to be impractical. It should be noted, however, that longitudinal designs offer researchers the ability to gain a clearer understanding of the degree and direction of causality (Bowman et al. 2002) and such designs can provide insights into much contested debates such as the causal relationship between rationality and performance (Van de Ven, 1992). Nevertheless, cross-sectional designs are commonly

used in SDMP research, and the present study also adopts this approach due to both practical considerations and because cross-sectional designs increase the prospects of generating a sufficiently large sample so as to be representative and, so as not to violate assumptions concerning the number of cases to predictor variables (Green, 1991).

Cross-sectional designs, compared to longitudinal designs, have the disadvantage of the data concerning SDMP characteristics and SDMP outcomes being collected together at one point in time, and there may be errors in reporting the process long after the event (Elbanna, 2010). However, consistent with cross-sectional SDMP studies, the current study attempted to minimise such memory error by requesting participants to choose only recent SDs which they were directly and significantly involved in (Dean and Sharfman, 1993a; Elbanna and Child, 2007a; 2007b; Papadakis et al. 1998). However, the need for recent SDs must also be balanced with the need for a sufficient amount of time to have passed so that participants can accurately assess the outcomes of the SDMP—hence, prospective participants were requested to only provide details for SDs for which the outcomes are known. Therefore, questionnaires for SDs which were made a long time ago, or where the outcomes are still unknown, were excluded from the study.

5.3.2 Summary of Overview of Data Collection Methods

Section 5.3 has provided an overview of the different data collection options available to SDMP researchers and presented a rationale for the method followed in the present study—a cross-sectional, multi-method field study (Snow and Thomas, 1994). This comprised an exploratory phase of semi-structured qualitative interviews and a subsequent questionnaire which was administered to a sample of TMT members, having first undergone rigorous pre-testing.

5.4 Sample Selection

Sample selection is a critical component of the research design, and significantly determines its integrity (Churchill and Iacobucci, 2005). The process of sample selection will be discussed in respect to (i) population definition; (ii) sampling procedure; (iii) sample size; (iv) informants, and; (v) unit of analysis.

5.4.1 Population definition

The population is the universe of units from which the sample is to be selected, and the sample therefore, is the segment of the population that is to be selected for the purposes of the research project (Bryman et al. 2008). Hence, the research population is the total number of cases in the sample that conform to certain parameters (Churchill and Iacobucci, 2005).

Following the extensive review of the literature as presented in chapters two and three, and after conducting the exploratory phase of research and pilot study, it became clear that a number of parameters were required for the sample selection. First of all, the extant literature contends that the SDMP differs significantly in small and micro sized-organisations compared to medium or large organisations (Beaver and Jennings, 2005; Brouthers et al. 1998; Robinson and Pearce, 1984). Hence it was decided to restrict the sample to organisations with more than 50 employees (i.e. not small or micro-sized organisations). Additionally, the pre-testing phase of research[2] revealed problems with identifying key informants for particularly large organisations. Several group CEOs commented that divisional MDs or CEOs were perhaps better placed to complete detailed questionnaires concerning the making of a recent SD, because they are in possession of more detailed knowledge of the process. Hence, there was a risk that by surveying especially large multi-divisional organisations, the most knowledgeable informant may not be easily identified (it is often just the group senior executives that are listed, and not divisional senior executives, on UK companies' annual filings). The pilot study

[2] See section 5.7 for a detailed discussion of the pre-testing phase.

also revealed several instances of where the group CEO had received the questionnaire and forwarded it to another senior executive (at a divisional level) who was judged to be a more suitable informant. This appeared to cause a good deal of confusion amongst informants and resulted in incomplete surveys and unwillingness to participate. Furthermore, if the population is very diverse in terms of the size of organisations, the sample size must be increased (Hussey and Hussey, 1997). Therefore it was decided in the main data collection to restrict the sample to companies with between 50 and 500 employees. Such boundaries ensured that no small or micro organisations would be surveyed, and it maximised the probability of the questionnaire reaching the most knowledgeable informant, because organisations with between 50 and 500 employees are less likely to be large multi-divisional groups of companies, as compared to organisations employing several thousand staff.

It was also decided to sample both manufacturing and service sector organisations. Whilst prior SDMP research has focused mostly on the manufacturing sector (e.g. Amason, 1996; Dean and Sharfman, 1993a; 1996; Goll and Rasheed, 1997; Papadakis et al. 1998; Elbanna and Child, 2007a; 2007b), both manufacturing and service sectors were sampled in order to maximise the variance in the sample (Lee and Lings, 2008), and to improve the generalisability of the findings. Whilst focusing on the manufacturing sector would have made the present study more directly comparable with the extant literature, the service sector accounts for approximately 75% of UK GDP[3], and omitting the services sector would have greatly restricted the generalisability of the findings. Furthermore, Papadakis et al. (2010) highlight how important the services sector is for developed economies and call for SDMP research on services organisations because the SDMP literature has primarily focused on manufacturing companies.

[3] Source: The Guardian—UK service sector grows faster than expected. Available at: <http://www.guardian.co.uk/business/2013/may/03/uk-service-sector-grows-markit-cips-pmi> [Accessed 3 July, 2013].

5.4.2 Sampling Procedure

A sampling frame is a list of elements from which the sample may be drawn, and includes mailing lists, directory references, and other large scale organisational listing sources. Alternative methods for extracting the desired sample can be categorised according to (i) probability sampling and (ii) non-probability sampling. Probability sampling occurs when every element in the population has an equal chance of selection (Aaker et al. 1998), whereas non-probability sampling occurs when the probability of any particular member of the population being selected is unknown (Zikmund, 1997). Selection of sampling units in non-probability sampling is arbitrary, and no method is known for estimating random sampling error, and as a result probability sampling was selected for use in the present study.

The most prevalent method of probability sampling is simple random sampling (Aaker et al. 1998; Churchill and Iacobucci, 2005; Zikmund, 1997). Simple random sampling entails drawing a completely random selection from a perfect list of the population (Lee and Lings, 2008). For example, all elements could be numbered and a random number generator utilised to draw the sample. A variation on this is systematic sampling where numbers are allocated to cases and then every *n*th case is selected (Lee and Lings, 2008).

Stratified random sampling is arguably a more accurate method (Churchill and Iacobucci, 2005) that separates the population into strata; the required sample is then taken systematically or randomly from these strata (Lee and Lings, 2008). Stratified random sampling is more accurate than simple random sampling because in a simple random sample two sets of sample error are present—the error between the strata, and the error within each strata. Stratified random sampling eliminates the error between the strata because the variation between strata is dealt with by the particular sub-groupings (Churchill and Iacobucci, 2005). In the present study, the stratification occurred according to the number of employees; and organisations with fewer than 50 or greater than 500 employees were excluded as being too small or too large.

5.4.3 Sample Size

Three factors should determine the sample size for a research design—the statistical analysis method, the degree of variability in the population, and traditions in the domain (Clegg, 1990; Elbanna, 2010), and these are discussed in turn below:

1. The statistical analysis method—the present study utilises exploratory factor analysis (EFA), confirmatory factor analysis (CFA), and multiple regression analysis. Regarding EFA, Mooi and Sarstedt (2011) and Nunnally (1978) recommend 10 cases per item used in the analysis, whereas Bauer et al. (2001) advocate a ratio of six cases for every item. Using Bauer et al's (2001) rule of thumb, this would necessitate a minimum sample size of 54 cases—because the SDMP characteristic behavioural integration comprised 9 items (see table 5.5.1) and as such has the largest number of items of any of the measures used. With regards to CFA, the literature cites 200 cases as being the minimum sample size (Shah and Goldstein, 2006), and ideally, there should be between 10 and 20 cases for each parameter (Chin, 1998; Jackson, 2003). Using Chin's (1998) rule of 10 cases would result in a minimum sample size of 90, because the SDMP characteristic behavioural integration has 9 paths leading into it.

Finally, regarding multiple regression analysis, Green (1991) proposes that in order to test a regression model overall (i.e. the R^2), the number of observations must be at least (50 + (8 x k)), where k is the number of independent variables. Alternatively, to test the individual relationships between predictor variables and the dependent variable (i.e. the β of the independent variables); Green (1991) proposes a rule of 104 + k. The present study's sample size of 169 cases comfortably exceeds the minimum sample size requirements using Green's (1991) rule of thumb for all of the regression models, with the exception of the regression models used to test hypothesis 5 (see chapter 8, section 8.2.2). The models used to test hypothesis 5 regress the 5 SDMP characteristics and the 13 contextual variables onto each of the 4 SDMP outcomes. In these models there are 18 independent variables,

thus necessitating a sample size of 194 i.e. (50 + (8 x 18)) in order to be able to assess the model overall. Hence the results of the test of hypothesis 5 can only be considered to be exploratory, and this is recognised as a limitation of the present study (as discussed in chapter 9, section 9.5.6).

2. Degree of variability—Populations with considerable variability require larger sample sizes to represent the diversity (Diamantopoulos and Schlegelmilch, 1997; Hussey and Hussey, 1997). The present study minimises the variability inherent in the general population by restricting the population to organisations employing between 50 and 500 employees.

3. SDMP traditions—Similar studies in the SDMP domain of literature, which utilise multivariate techniques, and individual SDs as the unit of analysis, contain samples of 169 cases or fewer. For example, Elbanna and Child (2007a) use 169 cases to factor analyse 24 external environmental items and utilised multiple regression analysis consisting of 13 independent variables. Papadakis et al. (1998) factor analysed 16 SD specific characteristics, and performed multiple regression analysis consisting of 25 independent variables using a sample of 70 SDs. Dean and Sharfman (1996) utilise multiple regression consisting of three independent variables using a sample of 52 SDs, and Dean and Sharfman (1993a) draw on a sample of 57 SDs and utilise 6 independent variables in their multiple regression model. Thus, in the SDMP literature, the ratio of cases to independent variables ranges from 3 to 1, to 17 to 1.

Hence when conducting the present study, consideration was paid to traditions in the SDMP domain of literature whilst attempts were also made to ensure that the sample size met the minimum requirements of the statistical methods employed (e.g. Green, 1991). Where this was not possible (e.g. hypothesis 5), it is made clear that this is a limitation.

5.4.4 Informants

SDs are made by the TMT (Papadakis and Barwise, 1997a), and hence any study of the SDMP should survey TMT members. Some studies have targeted the CEO—often cited as the most powerful member of the TMT (Hambrick and Mason, 1984)—as the key informant (e.g. Baum and Wally, 2003; Fredrickson, 1984; Fredrickson and Mitchell, 1984; Mitchell et al. 2011; Wally and Baum, 1994). However, a number of other studies have more broadly targeted TMT members such as Chief Officers, Directors, General Managers and Chairmen (e.g. Dean and Sharfman, 1996; 1993a; Elbanna and Child, 2007a; 2007b; Goll and Rasheed, 2005; Hitt and Tyler, 1991; Shrivastava and Grant, 1985). Given that the SDMP is a team process (Hambrick, 2007; Papadakis and Barwise, 2002) there are likely to be several TMT members with the requisite knowledge and competence to complete a survey concerning the SDMP. Indeed, arguably competence and knowledge are better indicators of an informant's appropriateness rather than job title (Elbanna, 2010).

The TMT is defined as the highest two executive levels (Wiersema and Bantel, 1992), but also as any managers participating in the SDMP (Amason, 1996), and most TMT definitions reflect convenience sampling (Carpenter et al. 2004). In the present study, the TMT are defined as those who have significant involvement in the SDMP, which is consistent with traditions in the domain (e.g. Amason, 1996; Dean and Sharfman, 1993a; Elbanna and Child, 2007a; 2007b). To ensure the most knowledgeable and competent informants completed the questionnaire, the covering letter requested that if there was a more appropriate senior executive to complete the questionnaire—that it was forwarded on to them. Furthermore, following Bello et al's (2010) approach, two items were included in both the main and second informant questionnaires assessing on a 7 point Likert scale, the informants involvement in the SD (1=very limited, 7=very extensive) and the informant's confidence in answering the questionnaire (1=not at all confident, 7=very confident). Cases where the informants answered 4 or lower were omitted from the final sample. Overall these procedures provide a high degree of comfort concerning the competency of the informants used in the analysis (Kumar et al. 1993).

To enhance the validity and reliability of the present study, attempts were made to collect data from several sources in addition to the main informant. For SDMP characteristics and outcomes variables, a second informant questionnaire was issued to the most knowledgeable senior executive as identified by the main informant. Because of the difficulty associated with collecting responses from multiple informants, and the inevitable impact on response rates, it was considered imperative to ensure that the second informant questionnaire was succinct, and hence it only captured SDMP characteristics and outcomes—variables most likely to be susceptible to social desirability bias. Firm characteristics variables (size, performance, and slack resources) were captured using the Financial Access Made Easy (FAME) database. The FAME database contains descriptive information relating to all registered UK companies, and has been utilised widely in management research (e.g. Al-Omiri and Drury, 2007; Crick and Spence, 2005; Harris and Ogbonna, 2001). Only TMT, SD specific characteristics, external environmental variables, and the firm characteristic external control were captured from a single informant. It should be noted however, that the use of single informants is common place in the SDMP literature (e.g. Brouthers et al. 2000; Elbanna and Child, 2007a; 2007b; Goll and Rasheed, 1997; 2005; Hart and Banbury, 1994; Mitchell et al. 2011; Wally and Baum, 1994).

5.4.5 Unit of Analysis

The present study adopts individual SDs as the unit of analysis, instead of focusing on organisational performance, because no two SDs are made in the same way, and considerable empirical evidence demonstrates that the unique characteristics associated with an SD are the most significant influence on the subsequent process by which it is made (Elbanna and Child, 2007b; Hickson et al. 1986; Papadakis et al. 1998).

Whilst a considerable number of studies adopt an organisational level of analysis (e.g. Baum and Wally, 2003; Goll and Rasheed, 1997; 2005; Priem et al. 1995), this assumes that organisations have

consistent SDMPs that do not vary according to each SD being made. Furthermore, an organisational level of analysis utilising organisational performance as the dependent variable has inherent problems associated with casual ordering ambiguity (Elbanna, 2006), and organisational performance is subject to influence by an array of external factors (Pearce et al. 1987). Moreover, there have been several calls in the literature for SDMP research to focus on outcomes other than simply measures of economic performance. Rajagopalan et al. (1993, p.380) state that "to a large extent, variables used to capture outcomes in the strategic decision process reflect the economic orientation of content researchers. This raises the disturbing question of whether economic measures of performance are the only legitimate outcome variables or whether they reflect the biases imposed by the researcher's own cognitive framework...it is also unclear whether economic outcomes are the only outcomes valued by top managers." These sentiments are echoed by Papadakis and Barwise (1997c) and Papadakis et al. (1998) who call for research examining non-economic outcome such as decision quality and commitment. Hence it was decided that the present study would follow a considerable body of literature (e.g. Amason, 1996; Dean and Sharfman, 1993a; 1996; Hickson et al. 1996; Hough and White, 2003; Olson et al. 2007; Papadakis et al. 1998), and concentrate on individual SDs.

The SDs which feature in this study were identified according to the following procedure: (i) the main informant had to identify the decision as being a strategic one, and detailed definitions and examples of SDs were provided. Furthermore, the questionnaire asked the respondent to provide an explanation of the SD; (ii) the decision had to be defined by the researcher as being strategic (drawing upon existing definitions and examples from the SDMP literature), and; (iii) the SD had to be recent, so as to minimise distortion and memory failure problems (Mintzberg et al. 1976). Table 5.4.5 presents an overview of the samples used in the various stages of the present study.

Table 5.4.5 Samples Used During Each Phase of Data Collection

Approach	Method	Comments
Phase 1: Exploratory study	Semi-structured interviews	Population: Medium and large UK services and manufacturing organisations
		Sampling procedure: Purposive
		Informants: TMT members
Phase 2: Descriptive analysis	Cross sectional, postal and e-mail questionnaire, multi-informant	Question types: Closed ended
		Pre-test: Protocols and pilot study
		Population: UK services and manufacturing organisations with between 50 and 500 employees (main data collection)
		Sampling procedure: Stratified
		Informants: TMT members
		Unit of analysis: Individual strategic decisions

5.4.6 Summary of Sample Selection

This section has provided a discussion concerning sample selection issues, which relate to defining the population, sampling procedures, sample size, informants, and the unit of analysis. The main data collection focuses on a sample of UK services and manufacturing organisations, with between 50 and 500 employees, using TMT members as informants and adopts individual SDs as the unit of analysis.

5.5 Operationalisation of Constructs

This section discusses how the focal constructs of the present study were measured, and these constructs are detailed in table 5.5.

Table 5.5 Focal Constructs Used in the Present Study

Category of Variable	Construct
SDMP Characteristics	• Procedural Rationality • Comprehensiveness • Behavioural Integration • Intuition • Political Behaviour
SDMP Outcomes	• Strategic Decision Quality • Implementation Success • Commitment • Speed
Contextual Variables: TMT	• Expertise • Cognitive Diversity • Power Decentralisation
Contextual Variables: SD Specific Characteristics	• Familiarity • Time Pressure • Uncertainty • Magnitude of Impact
Contextual Variables: External Environment	• Dynamism • Hostility-Munificence
Contextual Variables: Firm Characteristics	• Size • Performance • Slack Resources • External Control

The TMT expertise measure required multiple indicators to be developed because no suitable measures were identified in the literature. In order to develop a measure of TMT expertise, the following procedure, (adapted from DeVellis, 2003; Spector, 1992) was followed: (i) specify the domain of the construct; (ii) generate a pool of items; (iii) have the pool reviewed by experts; (iv) collect data, and; (v) assess the validity of the measure. TMT expertise is defined here for reader convenience, and is the extent to which the TMT has extensive knowledge concerning the SDMP, derived from:

(i) Extensive experience of making SDs;

(ii) Exact and precise feedback on SDs that they have made, and;

(iii) Deliberate practice, where TMT members have been involved in making challenging SDs which have stretched them beyond their existing levels of competence

In developing the TMT expertise measure each of the afore mentioned steps was followed. However, in this chapter, only steps one to three are dealt with—chapter 7 specifically addresses steps four and five. Also, step one—establishing the domain of the constructs has already been dealt with in chapters 2 and 3.

With regards to the item pool generation process, Churchill and Iacobucci (2005) and Spector (1992) advocate that the generation of items should be exhaustive and inclusive and items should be derived from the literature, discussions with knowledgeable people, and personal experience. Therefore, items were generated from a review of the SDMP, management, marketing, organisational behaviour, and social-psychology literatures, as well as from the exploratory phase of research which comprised 30 semi-structured interviews with TMT members. This pool of items was subject to an initial review where exceptionally lengthy, ambiguous, incongruous or jargonistic items were amended or eliminated. Consideration was also given to both positively and negatively worded items, and their relevance, in accordance with the recommended procedures of DeVellis (2003) and Spector (1992).

Following on from the item pool development described above, the initial pool was subject to expert review (DeVellis, 2003). The purpose of the expert review was to assess the items in order to maximise the content validity of the scale. Additionally, expert reviewers are able to confirm or invalidate the construct definition, evaluate the clarity and conciseness of the items, and suggest additional items that may tap the phenomenon that may have been missed (DeVellis, 2003).

Four academic experts and two senior executives who had expressed an interest in the study during the exploratory phase of research were selected to perform the review. They were each presented with an exhaustive list of items generated from the extant literature and from the semi-structured interviews. Strictly following the procedure advocated by DeVellis (2003), the expert reviewers were asked to assess each item according to its relevance, clarity, and conciseness. Reviewers were also asked to suggest any additional items. As a result of the expert review, the number of items was significantly reduced from 13 to 6.

All other constructs in the present study use existing measures, published in international peer reviewed journals graded as 4 or 4* in the 2010 Association of Business Schools journal rankings guide. These measures were identified following an exhaustive search of the management literature, and related literatures such as marketing, organisational behaviour, and social-psychology. Prior to inclusion in the final questionnaire, these scales—together with the newly developed TMT expertise measure, were subject to pre-testing which entailed think aloud protocol interviews and a pilot study. Some changes were made to the measures used in the final questionnaire following the pre-testing, and these changes are summarised in section 5.7. To minimise common method bias, several methods were used including the use of objective measures (e.g. using secondary FAME data for firm characteristics), carefully structuring the questions, reversing scale anchors, and using different types of item (e.g. external control uses a points allocation procedure). The following sections discuss the measures used in the final questionnaire.

5.5.1 SDMP Characteristics

Five SDMP characteristics were included in the present study; procedural rationality, comprehensiveness, behavioural integration, intuition, and political behaviour. These measures have featured in prior SDMP studies and have produced significant results, giving confidence in their use in the present study. These five SDMP characteristics were identified as being of particular

importance through the literature review and through the exploratory phase of qualitative research[4]. The contradictory findings of existing studies concerning the effects of rationality and comprehensiveness (e.g. Bourgeois and Eisenhardt, 1988; Fredrickson and Mitchell, 1984), and the urgent need for research examining intuition and political behaviour (Child et al. 2010; Elbanna et al. 2012) necessitated the inclusion of these four variables. Behavioural integration was included due to the focus of existing SDMP characteristics (e.g. procedural rationality) being on information processing—which neglects the complex social aspects of SDM.

The behavioural integration measure was adapted because it had not featured previously in a decision-level study (prior use has been at the organisational level). Only one measure of behavioural integration was identified in the review of the literature. Furthermore, following the protocol interviews minor changes were made to the procedural rationality measure as described in section 5.7 of this chapter. The Dean and Sharfman (1996) measure of procedural rationality was considered to be most appropriate due to it being at the decisional level. The Miller et al. (1998) measure of comprehensiveness was chosen instead of the Fredrickson and Mitchell (1984) measure for two reasons. First the Miller et al. (1998) measure has been shown to demonstrate high levels of validity and reliability across multiple different studies (e.g. Atuahene-Gima and Li, 2004; Miller et al. 1998; Slotegraaf and Atuahene-Gima, 2011). Second, the Miller et al. (1998) measure of comprehensiveness is parsimonious and better suited to a self-completion survey instrument compared to the Fredrickson and Mitchell (1984) measure. This was a vital consideration for a survey that spanned 15 pages and intended for severely time-constrained senior executives. Very few measures of intuition and political behaviour at the decision level are available, and hence ones reported as demonstrating acceptable levels of reliability and validity were selected. The constructs were operationalised as detailed in table 5.5.1 (see appendix 7 for the main informant survey instrument, and appendix 8 for the second informant survey instrument).

[4] Chapter 2 provides a detailed explanation and justification for the inclusion of these five SDMP characteristics.

Table 5.5.1 Operationalisation of SDMP Characteristics

Construct	Item Summaries	Constructs Derived From	Questionnaire Location
Procedural rationality	1. Looking for relevant information 2. Analysing relevant information 3. Using analytical techniques 4. Effectiveness at focusing on crucial information 5. Overall process (reverse scaled)	Dean and Sharfman (1993a; 1993b; 1996); Elbanna and Child (2007a; 2007b)	Section B, Q1.1, 1.2, 1.3, 2, 3.
Comprehensiveness	1. Developing alternative courses of action 2. Considering multiple criteria 3. Examining multiple explanations 4. Searching for alternatives 5. Examining courses of action	Miller et al. (1998)	Section B, Q5.1 to 5.5
Behavioural Integration	1. Volunteering to manage the workload 2. Switching responsibilities 3. Helping each other to meet deadlines 4. Letting others know effects of actions 5. Understanding joint problems and needs 6. Discussing expectations 7. Exchange of high quality ideas 8. Exchange of high quality solutions 9. Creative and innovative dialogue	Simsek et al. (2005); Lubatkin et al. (2006); Carmeli and Schaubroeck (2006)	Section F, Q2.1 to 2.9
Intuition	1. Reliance on personal judgment 2. Dependence on gut feeling 3. Trusting hunches 4. Faith in initial feelings 5. Emphasis on feelings	Dayan and Elbanna (2011); Khatri and Ng (2000)	Section B Q1.4, 1.5, 1.6, 1.7, 1.8.
Political Behaviour	1. Preoccupation with individual interests 2. Openness about interests and preferences (reverse scaled) 3. Use of power 4. Bargaining 5. Alliance formation 6. Hiding and distortion of information 7. Variation in points of view	Dean and Sharfman (1993b; 1996); Elbanna and Child (2007a); Papadakis et al. (1998)	Section B Q4, Q6.1 to 6.6

5.5.2 SDMP Outcomes

Four SDMP outcomes were included in the present study; SD quality, implementation success, commitment and SD speed. These four SDMP outcomes were identified as being vitally important in

the review of the literature[5] and calls have been made in the literature for a focus not just on the overall quality of an SD, but also on implementation, commitment and speed (e.g. Eisenhardt and Zbaracki, 1992; Papadakis and Barwise, 1997c; Rajagopalan et al. 1993). The operationalisation of these constructs is summarised in table 5.7.2. Because the focus of the study was on individual SDs, it was not possible to use objective dependent variables such as organisational performance. Organisational performance is affected by a diverse range of extraneous factors, and hence the process by which a single SD is made may only have a weak bearing—if any at all, on overall organisational performance (Dean and Sharfman, 1996; Elbanna, 2006). Furthermore, economic outcomes are not the only outcomes that matter to senior executives, and authors such as Rajagopalan et al. (1993) have argued for a better conceptualisation of SDMP outcomes. Papadakis and Barwise (1997c) also question whether economic performance is the only outcome that matters—and instead they advocate a focus on decision level outcomes, such as commitment, because it is unclear how process and context affect such outcomes.

Amason (1996, p.134) argues that "the best way to gauge the quality of an individual strategic decision is to ask those who observed its effects and who understand its context to judge, retrospectively and on several dimensions, how the decision turned out." Also, outcome measures such as decision quality are less susceptible to causal ordering ambiguity compared to organisational performance (Dean and Sharfman, 1996). Furthermore, objective measures of the overall quality of an individual SD are problematic to locate—although this could be achieved by accessing company data—such an approach would be unlikely to prove successful as such data may not exist, would be problematic to weight in terms of its importance, and difficult to gain access to (Dean and Sharfman, 1996). As Amason (1996) argues, using objective data to evaluate a single SD assumes that each SD has an equal chance of attaining its objectives. This is unrealistic in practice, as TMTs may have to choose between a series of poor alternatives. Hence an objective measure would indicate this to be a

[5] Chapter 3, section 3.6.6 explicates the rationale for including these four SDMP outcome variables.

poor decision, regardless of the choice made, as compared to an SD made by a team facing a series of better alternatives (Amason, 1996).

It should be noted that the survey utilised in the pre-test phase of the research (see section 5.7 of this chapter) originally included a measure of SD effectiveness, per Dean and Sharfman (1996) and Elbanna and Child (2007a). However, following feedback gathered in the think aloud protocol interviews and in the pilot study, Amason's (1996) measure of SD quality was favoured in the main data collection owing to the following reasons: (i) it did not require respondents to disclose confidential and sensitive information, and; (ii) it is quick and straight forward for respondents to answer.

The inclusion in the present study of not just overall SD quality, but also of implementation success, commitment, and speed address several calls in the literature for a broadening of focus onto multiple non-economic SDMP outcomes (e.g. Elbanna and Child, 2007a; Papadakis and Barwise, 1997c; Papadakis et al. 1998; Rajagopalan et al. 1993). A second informant's response was also obtained for the SDMP outcomes (as well as for SDMP characteristics), which enabled the assessment of interrater reliability to establish a high degree of confidence in the reliability of these measures.

Strategic decision speed was measured in relative terms as opposed to absolute terms. It should be noted that an absolute measure of speed was also obtained for the purposes of determining the convergent construct validity of the relative measure of SD speed. A relative measure of speed was selected because Schumpeterian perspectives of competitive advantage emphasise the importance of measuring speed relative to rivals (Clarke and Maggitti, 2012). Furthermore, organisational theorists such as D'Aveni (1994), Galbraith (1973) and Thompson (1967) advocate that "decision speed should

at least match and preferably exceed the rate of change in the external environment" (Clarke and Maggitti, 2012, p.1178).

Relatively few SDMP studies, with the notable exception of Dean and Sharfman (1996), have examined implementation success. Hence a measure of implementation success was obtained from the marketing literature (Noble and Mokwa, 1999) and adapted for use in the present study. Dean and Sharfman's (1996) measure of implementation quality was not used because of the difficulties encountered in the survey pre-test (see section 5.7.5) where informants objected to the SD effectiveness measure—which is operationalised in a similar way to Dean and Sharfman's (1996) implementation quality measure, entailing the weighting of the different implementation tasks and subsequent evaluation of the quality with which each task was performed. It should be noted that the Noble and Mokwa (1999) implementation success was originally developed for middle managers to complete regarding the implementation of a marketing strategy, and adopted an organisational level of analysis. Hence, the wording of the items was adapted for use in the present study so as to make them applicable at the decisional level of analysis, and for TMT members.

The only available decisional level measure of commitment identified was that utilised by Olson et al. (2007a) which is based on Wooldridge and Floyd's (1990) original measure. Olson et al. (2007a) report more than satisfactory levels of reliability and validity for this measure and hence it was selected for inclusion in the present study.

Table 5.5.2 Operationalisation of SDMP Outcomes

Construct	Items	Constructs Derived From	Questionnaire Location
Strategic Decision Quality	1. Quality of decision relative to its original intent 2. Quality of decision given its effect on company performance 3. Overall quality of decision	Amason (1996)	Section D Q3.1 to 3.3
Implementation Success	1. Example of effective implementation 2. Implementation effort 3. Considered a success in the company 4. Considered a success by decision-makers 5. Considered a success in respondent's area of the company	Noble and Mokwa (1999)	Section D, Q8.1 to 8.5
Commitment	1. Willingness to properly implement 2. Working hard and enthusiastically 3. Belief would improve company performance 4. Consistent with personal priorities and interests 5. Satisfaction with alternative chosen 6. Best alternative	Olson et al. (2007a)	Section D, Q4.1 to 4.3, Q5, Q6, Q7
Strategic Decision Speed (Relative measure)	1. Took too long relative to rivals (reverse scaled) 2. Quick given the environment 3. Quick decision	Clarke and Maggitti (2012); Wally and Baum (1994)	Section D, Q2.1 to 2.3
Strategic Decision Speed (Absolute measure)	Number of months taken from deliberate consideration of decision to commitment to act	Eisenhardt (1989); Judge and Miller (1991)	Section D, Q1

5.5.3 Contextual Variables – the Top Management Team

Three TMT variables were included in the present study; expertise, cognitive diversity, and power decentralisation. These three variables were identified as being highly significant contextual variables through the review of the literature (chapter 3) and the exploratory qualitative phase of research (chapter 4). The TMT expertise measure was developed in line with the procedures previously stated. However, one item was also drawn from two extant studies—Dayan and Elbanna (2011) and Dayan and Di Benedetto (2011). Both cognitive diversity and power decentralisation measures have been utilised in prior SDMP studies, and hence confidence in their reliability and validity was high. No

alternative measures—other than the one originally developed by Eisenhardt and Bourgeois (1988)—for power decentralisation were identified. Whilst Miller et al. (1998) report alternative measures of cognitive diversity, the four item version was used because of its relatively recent use by Olson et al. (2007a) which demonstrated its high levels of reliability and validity. Furthermore, this four item measure captures both preference and belief diversity (Olson et al. 2007a) and hence this scale very effectively represents the cognitive diversity construct. The operationalisation of these constructs is summarised in table 5.5.3 below.

Table 5.5.3 Operationalisation of TMT Variables

Construct	Items	Constructs Derived From	Questionnaire Location
TMT Expertise	1. Wealth of information from prior assignments 2. Feedback on prior decisions 3. Experience of facing challenging decisions 4. High level of expertise 5. Track record of making effective decisions 6. Learnt a lot from prior decisions	Dayan and Elbanna (2011); Dayan and Di Benedetto (2011)	Section F, Q3.1 to 3.6
TMT Cognitive Diversity	1. Long term profitability 2. Goal priorities 3. Long term survival 4. Most important objectives (All items reverse scaled)	Miller et al. (1998)	Section F, Q1.1 to 1.4
TMT Power decentralisation	Made by CEO alone/CEO and one or few TMT members/CEO and most or all of TMT/entire TMT as a group	Cao et al. (2010); Eisenhardt and Bourgeois (1988); Eisenhardt (1989)	Section A, Q4

5.5.4 Contextual Variables – SD Specific Characteristics

Four SD specific characteristics variables were included in the present study; familiarity, time pressure, uncertainty, and magnitude of impact. These particular variables were identified as being of importance during the review of the literature (chapter 3) and during the exploratory qualitative phase of research (see chapter 4). Because relatively few empirical studies have examined SD specific characteristics, these measures were drawn predominantly from Papadakis et al. (1998) and Dean and

Sharfman (1993a)—both of which obtained significant results and acceptable levels of reliability and validity. SD uncertainty has also featured in Elbanna and Child (2007a; 2007b) and Elbanna et al. (2012), with these studies again producing significant findings, and the measures demonstrating acceptable levels of validity and reliability. Hence, confidence in the use of these measures was high. It should be noted however, that following the protocol interviews and pilot study some adaptations were made to the SD familiarity and time pressure measures. These adaptations are detailed in section 5.7 of this chapter. The operationalisation of the SD specific characteristics constructs is summarised in table 5.7.4 below.

Table 5.5.4 Operationalisation of SD Specific Characteristics Variables

Construct	Items	Constructs Derived From	Questionnaire Location
Familiarity	1. Frequency of occurrence 2. Familiarity with type of decision 3. Similarity to decisions dealt with in the past	Dean and Sharfman (1993a); Papadakis et al. (1998)	Section C, Q1, Q2, Q3
Time pressure	1. Strict time pressure on decision makers 2. Pressure to take immediate decision	Papadakis et al. (1998)	Section C, Q4.1 and 4.2
Uncertainty	1. Difficulty predicting outcomes 2. Uncertain about actions to take 3. Not clear what information required	Papadakis et al. (1998)	Section C, Q4.3 to 4.5
Magnitude of Impact	Impact on: profit, quality, delivery, costs, sales and marketing, market share, the need to change programmes, and overall adjustment required	Papadakis et al. (1998)	Section C, Q5.1 to 5.8

5.5.5 Contextual variables – the External Environment

Two external environmental variables were included in the present study; dynamism and hostility-munificence, which were identified as being of particular saliency in the literature review and in the exploratory phase of research. These measures have featured repeatedly in the strategic management literature, and a number of studies have produced significant findings and demonstrated high levels of reliability and validity (e.g. Elbanna and Child, 2007a; Mitchell et al. 2011), therefore confidence in

these measures was high. The operationalisation of these constructs is summarised in table 5.5.5 below.

Table 5.5.5 Operationalisation of External Environmental Variables

Construct	Items	Constructs Derived From	Questionnaire Location
Dynamism	1. Change marketing practices 2. Rate of product/service obsolescence 3. Predictability of competitors 4. Stability of competition 5. Ability to forecast demand 6. Ability to forecast customer preferences (All items reverse scaled)	Mitchell et al. (2011); Green et al. (2008); Miller and Friesen (1982)	Section E, Q1.1 to 1.6
Hostility-Munificence	1. Threat to survival 2. Stressfulness 3. Dominating environment	Khandwalla (1977); Elbanna and Child (2007a; 2007b); Papadakis et al. (1998)	Section E, Q2.1 to 2.3

5.5.6 Contextual variables – Firm Characteristics

Four firm characteristics variables were included in the present study; size, performance, slack resources, and external control. To minimise common method bias and maximise reliability, three of the variables were operationalised using secondary data available from the FAME database. Furthermore, following feedback from the think aloud protocol interviews (see section 5.7 of this chapter) attempts were made to shorten the overall length of the questionnaire, and hence secondary data was used instead of perceptual measures for firm characteristics variables. The operationalisation of firm size and performance is consistent with prior SDMP studies which have obtained significant findings. Only one measure of external control was identified during the literature review (Dean and Sharfman, 1993a). The specific operationalisation of slack resources was chosen because it has been used frequently in the literature and because the data available in FAME permitted this particular operationalisation. The operationalisation of the firm characteristics variables is summarised in table 5.5.6.

Table 5.5.6 Operationalisation of Firm Characteristics Variables

Construct	Items	Constructs Derived From	Questionnaire Location
Size	Number of full time employees in year of SD (using natural log)	Fredrickson (1984); Dean and Sharfman (1993a); Papadakis et al. (1998); Elbanna and Child (2007a; 2007b);	Not included—measured using FAME data
Performance	Return on assets (profit or loss before tax / total assets) averaged for five year period prior to year of SD	Bourgeois (1980); Papadakis et al. (1998)	Not included—measured using FAME data
Slack Resources	Gearing (short term loans and overdrafts + long term liabilities / shareholders' funds) averaged for five year period prior to year of SD (This measure was reverse scored to give a more intuitive measure of slack because the above calculation provides a figure for unavailable slack)	Li et al. (2013); Bourgeois (1981); Hambrick et al. (1996); Combs and Ketchen (1999)	Not included—measured using FAME data
External Control	Informant asked to allocate 100 points to each of the following according to their influence on the making of the SD: This company's TMT; shareholders; financial institutions; parent company; government and other external groups (Scale is sum of all items except the company's TMT)	Dean and Sharfman (1993a)	Section A, Q5

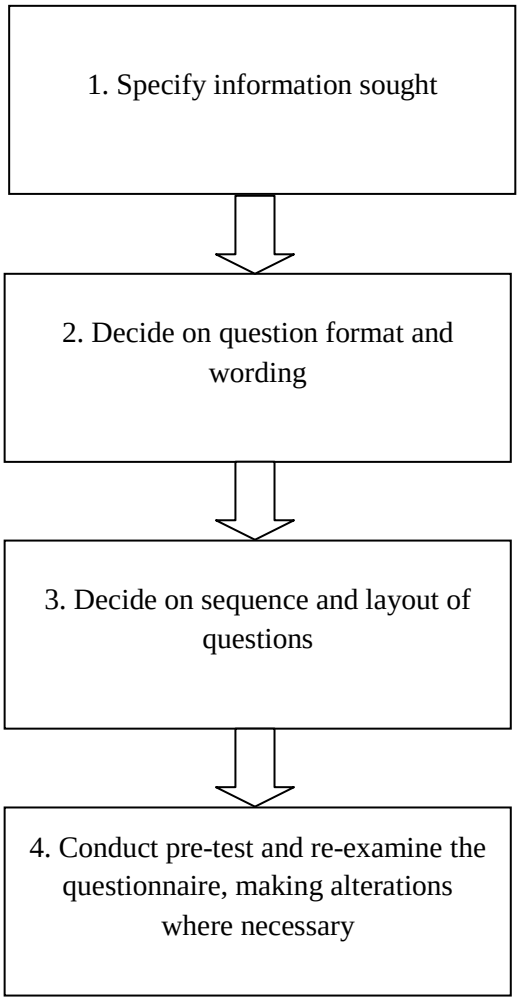
5.5.7 Summary of Operationalisation of Constructs

This section has detailed the measures used to operationalise the focal constructs in the present study pertaining to SDMP characteristics, SDMP outcomes, the TMT, SD-specific characteristics, the external environment, and firm characteristics. This section has also detailed the procedures by which the TMT expertise scale was developed, and highlighted how three firm characteristics (size, performance, and slack resources) were operationalised using objective, secondary data.

5.6 Questionnaire Design

This section outlines the process which was followed during the development of the questionnaire used in the main data collection. The questionnaire was designed in accordance with a number of widely cited methodological texts, and broadly followed the following steps, albeit in an iterative manner:

Figure 5.6 Questionnaire Design Process



(Adapted from Aaker et al. 1998; Churchill and Iacobucci, 2005; Mooi and Sarstedt, 2011; Zikmund, 1997).

When selecting the questionnaire as the communication method, Churchill and Iacobucci (2005) state that consideration must be paid to three critical issues: (i) the degree of structure; (ii) the degree of disguise, and; (iii) the method of administration. Each of these three issues is addressed in turn, followed by a discussion concerning the format, wording, sequence, and layout of the questionnaire.

5.6.1 Degree of Structure

The degree of structure refers to "the degree of standardization imposed on the questionnaire" (Churchill and Iacobucci, 2005, p.215). Highly structured questionnaires have predetermined questions and responses. In contrast, unstructured questionnaires have more open-ended questions and respondents are able to answer in their own words (Churchill and Iacobucci, 2005). A structured questionnaire was chosen for the present study because of the following reasons:

1. Reliability—a consistent set of alternative responses help to frame the reply;

2. Diminished interviewer effects—the questions are worded consistently and asked in the same order;

3. Fixed alternative questions are appropriate for soliciting attitudes and opinions;

4. Informant convenience—given that the target informants are senior executives who have very limited time, the questionnaire needed to be convenient for them to complete, and;

5. Analysis—open ended responses would negate the application of multivariate data analysis techniques, particularly from a large number of responses.

(Bryman et al. 2008; Churchill and Iacobucci, 2005)

5.6.2 Degree of Disguise

Disguise refers to "the amount of knowledge about the purpose of a study communicated by the respondent" (Churchill and Iacobucci, 2005, p.215). Researchers may choose to disguise the purpose of the study if they have reason to believe that informants will respond differently if they have knowledge of the purpose of the study. In the present study, given the commercially sensitive nature of the information being sought it was considered essential to communicate the rationale of the study

and details of the sponsor (Aston Business School—Aston University), to reassure informants that the sole purpose of the questionnaire was for the successful completion of a PhD. From the exploratory phase and pilot study it was apparent that, time permitting, senior executives were willing to participate in the study because (i) they wanted to assist a PhD student complete their course of study, and (ii) they could perceive the relevance of the research being undertaken. Hence both of these points were stressed to potential participants in communications with them.

5.6.3 Method of Administration

There are a number of different methods for administering a questionnaire, which include personal interview, telephone interviews, email and web-based questionnaires, and postal questionnaires (Bryman et al. 2008; Churchill and Iacobucci, 2005; Mooi and Sarstedt, 2011). Each of these methods has both advantages, and disadvantages, and table 5.6.3 summarises these.

Table 5.6.3 Summary of Questionnaire Administration Methods

Method	Advantages	Disadvantages
Face to face	• Instant feedback allowing interviewer to adapt questions • Can build rapport to engender trust • Respondents are more likely to answer questions honestly	• Slow • Prone to human error • Costly • Interviewer bias
Telephone	• Speed • Cheaper compared to postal methods • Can overcome logistical problems where face to face meetings are impractical	• Interview is less personal • More difficult to establish a rapport over the phone—no face to face communication
Computer	• Speed • Cheap • Reduced error—no interviewer errors • Can incorporate visual displays • Real time data collection • Respondents may be more honest than when face to face	• Set up costs can be high • Privacy concerns • Sample monitoring may be problematic
Postal	• Can cover a wide geographical area • Cost effective • Good availability of mailing lists • Respondents can complete the questionnaire at their own convenience	• Response rates can be low and untimely • Risk of social-desirability bias • Extensive pre-testing required to ensure questionnaire format and layout is clear and appropriate • Comparatively slow • Self-selection bias could result in unrepresentative sample

(Table adapted from Churchill and Iacobucci (2005), Dillman (2000), Easterby-Smith (1999), Hooley et al. (2004), Webster (1996), and Mooi and Sarstedt (2011)).

A brief discussion of each of the above administration methods is now provided.

5.6.3.1 Face to Face Interviews

Significant issues with this method exist because of travel costs, and sample size requirements (Weiers, 1988). Furthermore, there are problems with the researcher also being the interviewer (Webster, 1996), because a high degree of subjectivity may exist with the way in which the interviewer gathers and records the interview data (Weiers, 1988).

5.6.3.2 Telephone Interviews

Telephone interviews are generally considered to be inappropriate for lengthy surveys (Churchill and Iacobucci, 2005) where a significant amount of data needs to be collected. Given the number of variables in the present study, it is highly likely that respondents would become fatigued and uninterested when answering the questionnaire through a telephone interview. Furthermore, estimates suggest that the probability of reaching the desired contact is less than 10% (Kerin and Peterson, 1983), and this may be even lower considering that senior executives are shielded by gatekeepers such as secretaries and PAs who are extremely reluctant to allow unsolicited callers to speak directly to senior executives.

5.6.3.3 Computer Based Questionnaires

Whilst cost effective and potentially fast (Churchill and Iacobucci, 2005), computer based questionnaires have received criticism because only respondents of a certain profile are likely to respond to such research (Forrest, 1999; Mooi and Sarstedt, 2011). Three additional reasons meant that computer based questionnaires were not chosen as the primary means of administering the questionnaire, although respondents were offered the choice between an electronic version and postal

version during the main data collection. First, a database of email addresses of senior executives was not available, and second, gatekeepers screen incoming emails addressed to senior executives meaning that many of the emails do not reach their target. Finally, due to the high volumes of emails that senior executives receive it is likely that unsolicited requests for participation via email would be ignored or simply deleted on receipt. Hence an electronic version of the questionnaire was only offered to participants who had agreed to be part of the sample frame, and had indicated this to be their preferred means of receiving the questionnaire in the main data collection. Computer based questionnaires were not used in the pilot study.

5.6.3.4 Postal Questionnaires

Postal questionnaires address many of the previously mentioned problems associated with the other methods of questionnaire administration. Jobber (1989) asserts that no other method of questionnaire administration is as cost effective as the postal method. There are also several other advantages to postal questionnaires: (i) Interviewer bias is eliminated (Churchill and Iacobucci, 2005); (ii) respondents are able to complete the questionnaire at a time that suits them best; (iii) the respondent can remain anonymous, and; (iv) there are a number of widely available databases of senior executives' postal addresses.

It should be noted however, that postal questionnaires do have shortcomings. One of the most significant drawbacks is non-response bias, which refers to the fact that non-respondents may provide different responses to those who do respond. In practice, there are a number of techniques that researchers can deploy to overcome these problems and to maximise response rates (Dillman, 2000). Furthermore, there are techniques which allow the estimation of non-response bias in mail surveys (Armstrong and Overton, 1977) which are adopted in the present study.

The present study adopts both mail and e-mail methods of questionnaire administration, and allowed the members of the sample frame to select their preferred method of receiving the questionnaire in order to make the process as convenient as possible for them so as to maximise response rates. Using the Dillman (2000) tailored design method; table 5.6.3.4 summarises the procedure employed for the administration of the questionnaire in the main data collection. The process and techniques used to maximise response rates are described in more detail in section 5.8 of this chapter.

Table 5.6.3.4 Main Data Collection Questionnaire Administration

Stage	Method
1. Generate sample frame	Information pack sent to 6,000 UK medium and large manufacturing and services organisations inviting them to become part of the sample frame. This comprised: • An introductory letter on Aston Business School headed paper; • An overview of the study • A participation request form, which asked for two recent SDs—one successful and one unsuccessful, and asked how the respondent would prefer to receive the main and second informant questionnaires—either via post or email
2. Questionnaires sent	• Questionnaires were either posted or emailed to participants, together with instructions regarding which of the two SDs they should complete the questionnaires in relation to. • Prior to emailing or posting the questionnaires, participants were telephoned and thanked for agreeing to participate and notified that the questionnaires will arrive imminently.
3. Reminder phone calls and emails	• Two weeks after sending the questionnaires all non-respondents were telephoned and emailed to remind them to complete the questionnaires (and where the second informant had not responded—they were asked to ensure that the second informant questionnaire was also completed)
4. Reminder letter	• Four weeks after sending the questionnaires all non-respondents were sent a reminder letter requesting that they complete the questionnaires (and where the second informant had not responded— they were asked to ensure that the second informant questionnaire was also completed)
5. Replacement questionnaires	• Six weeks after sending the questionnaires all non-respondents were sent replacement questionnaires, and again asked to complete them. Replacement questionnaires were also sent where no response had been received from the second respondent.
6. Final reminder phone calls and email	• Eight weeks after sending the questionnaires all non-respondents were telephoned and emailed to remind them to complete the questionnaires (and where the second informant had not responded— they were asked to ensure that the second informant questionnaire was also completed)

5.6.4 Question Format and Wording

There are three types of question that can be used in a questionnaire: (i) open-ended; (ii) closed-ended, or; (iii) dichotomous (Aaker et al. 1998; Bryman, 2008; Churchill and Iacobucci, 2005). Each has advantages and disadvantages, which are briefly discussed in relation to the present research.

5.6.4.1 Open-ended Questions

Open-ended questions allow respondents to reply however they wish, in their own words (Bryman, 2008). The main advantage of open-ended questions is that a large range of varying responses can be generated, and such an approach is particularly beneficial for exploring new areas and when the researcher has limited knowledge of the topic (Bryman, 2008; Lee and Lings, 2008). However, the major disadvantage of open-ended questions is the lack of consistency and comparability across respondents (Lee and Lings, 2008). Open-ended questions often require a great deal of effort on behalf of the respondent as they are likely to provide more detail than they otherwise would for a closed-ended question (Bryman, 2008). Hence, in the present study the use of open-ended questions would have made the coding and classification process problematic and time-consuming, and resulted in unusable data and potentially low response rates.

5.6.4.2 Closed-ended Questions

Closed-ended questions require the respondent to make a choice from a range of different answers, or from a rating scale. Closed-ended questions enhance the comparability of answers (Bryman, 2008), and are easier to answer (Aaker et al. 1998), as there is usually a limited choice and little interpretation is required. The main disadvantage associated with closed-ended questions is the loss of spontaneity—there is always a chance that a respondent may have provided an answer not covered by the fixed response choices provided, and respondents are forced to provide a response no matter how irrelevant they may perceive the question to be (Bryman, 2008).

5.6.4.3 Mixed Question Types

Both open-ended and closed-ended questions can be used, and this is commonly used to allow respondents the option to select 'Other' and to elaborate on their choice (Bryman, 2008). Open-ended questions can also be used at the start of the questionnaire (Lee and Lings, 2008), and in the present study the questionnaire commenced by asking the respondent to provide some background to the SD chosen. Furthermore, the questionnaire ended by asking the respondent to provide any additional information that they considered to be relevant. However, as previously mentioned, throughout the remainder of the questionnaire closed-ended questions were utilised to ensure consistent and comparable responses were provided to facilitate the use of multivariate analysis techniques. The Likert scale (Likert, 1932) is used in the majority of empirical SDMP studies (e.g. Amason, 1996; Dean and Sharfman, 1993a; 1996; Fredrickson, 1984; Fredrickson and Mitchell, 1984; Papadakis et al. 1998; Sharfman and Dean 1997a), and owing to its simplicity and suitability for multivariate analysis techniques it was utilised in the present study. Hence, the present study used open-ended questions to capture certain descriptive statistics (e.g. the type of SD), but mostly relied on closed-ended questions in a Likert scale format.

5.6.5 Sequence and Layout of Questions

Churchill and Iacobucci (2005) state that the sequence and layout of questions can be critical to the success of a particular survey, and they offer several guidelines for the sequencing of questions. These guidelines were incorporated into the present study and include: (i) use simple and interesting opening questions; (ii) use the funnel approach—starting with broad questions and progressively narrow the scope of the questions; (iii) ask for classification information last, and; (iv) place difficult or sensitive questions last.

5.6.6 Summary of Questionnaire Design

This section has discussed the design of the questionnaire, specifically addressing issues and considerations relevant to the degree of structure, the degree of disguise, the method of administration, as well as the format, wording, sequencing, and layout of the questionnaire.

5.7 Pre-testing of the Questionnaire

The questionnaire pre-test is vital to assess how well it performs under the real conditions of data collection (Churchill and Iacobucci, 2005). Two pre-tests should be conducted: The first should be a personal interview (also referred to as a think aloud protocol interview) (Diamantopoulos et al. 1994). During a think aloud protocol interview respondents complete the questionnaire with the researcher present and comment as they go, highlighting ambiguous, difficult, or problematic questions. The researcher then records these comments and can modify the questionnaire accordingly (Lee and Lings, 2008). The second pre-test should be a pilot study, which is a smaller-scale version of the intended full study. The pilot study is designed to uncover any problems associated with the intended mode of administration to be used in the full study (Churchill and Iacobucci, 2005). The present study adopted both a think aloud protocol pre-test and a pilot study in order to comprehensively assess the questionnaire design. The procedures followed in these two pre-tests are now discussed, together with the major changes that resulted from this phase of the study.

5.7.1 Phase 2.1 Pre-Test: Think Aloud Protocol Interviews

Think aloud protocol interviews are similar to interviews; however, the researcher adopts a largely passive role and records the respondent's comments as the questionnaire is being completed. Issues concerning wording, sequence, layout, and size can all be highlighted through think aloud protocol interviews. It is critical to identify such issues because they can significantly affect response rates (Albaum et al. 1998).

The framework for conducting the think aloud protocol interviews was adapted from Webb (2001) and focused on establishing: (i) the clarity of the questions; (ii) how easy the questions were to answer; (iii) whether the questions appeared to flow logically; (iv) how acceptable the length of the questionnaire is, and; (v) whether the respondent engaged with the questionnaire.

Four think aloud protocol interviews were conducted with four Managing Directors of medium to large sized manufacturing and service sector organisations, and a summary of their comments can be found in appendix 1. Where one respondent expressed a viewpoint which conflicted with the majority of the other respondents, a majority view was taken following consultation with academic experts.

5.7.2 Phase 2.1 Pre-Test: Pilot Study

Changes were made to the initial questionnaire following the protocol feedback, and subsequently a mail based survey was administered to a sample of 500 TMT members in order to highlight any previously undetected issues. The pre-test sample of 500 TMT members was drawn from a random sample of 500 medium and large sized, UK based manufacturing and service sector organisations. The sample was drawn from the FAME database of UK company information. A pre-notification letter was sent in accordance with the recommendations of Dillman (2000) and the feedback gained from the think aloud protocol interviews. One week after, the questionnaires and covering letters were dispatched. Both the pre-notification letter and covering letter highlighted the importance of the research—for both the researcher and potentially, the respondent. Anonymity and confidentiality was assured, and participants were offered a management report of the findings of the study, and a charitable donation to be made on their behalf. All letters were personally addressed to the TMT member, and a pre-paid return envelope was also provided. In addition, the following sentence was added to the covering letter: “If there is another member of your senior management team who you feel is better placed to complete this questionnaire, I would be most grateful if you could pass it on to them”. The purpose of this sentence was to maximise response rates, and it was hoped that instead of

the questionnaire simply being disposed of by an unsuitable recipient, rather, it would be forwarded onto a more appropriate recipient. Due to cost and time constraints only one informant was sought for the pilot study, and it was not possible to perform the pre-qualification procedures used in the main data collection to generate the sample frame.

5.7.3 Response Analysis for Pilot Study

Of the 500 questionnaires sent, 71 useable responses were received back over a 6 week period. Eight questionnaires were returned by the postal service because the intended recipient had "gone away" or was "no longer at this address". Therefore, the overall response rate for the pilot study was 14%. Given the relatively good accuracy of the contacts generated by the FAME database (only 1.6% of the 500 records were inaccurate) this database was judged to be satisfactory for use in the main data collection.

5.7.4 Comments from Respondents

Several respondents provided comments on the pilot questionnaire which indicated that the questionnaire exhibited a high degree of face validity. This suggests that the variables and questions included in the questionnaire were deemed logical and appropriate (Mooi and Sarstedt, 2011). A sample of these comments are summarised in table 5.7.4 below.

Table 5.7.4. Summary of Comments Received From Pilot Study Participants

Comment	Respondent
"This is a fascinating and business critical area where little research is applicable. Any logic or nuggets of information gleaned from your research would be welcome here."	Group Operations Director
"Very good, well-structured questionnaire. Look forward to seeing the results."	Managing Director
"Great questionnaire overall"	Managing Director
"Very good series of questions and I appreciated the ease of completion. It made me stop and think!"	CEO
"Most questionnaires are a complete waste of everyone's time. This was better."	CEO

5.7.5 Changes Made Following Pre-Test

Following the think aloud protocol interviews and pilot study, several changes were made to the questionnaire, and the method of administering the questionnaire was also amended. Due to the relatively small sample size of the pilot study, the statistical outputs generated from the exploratory analysis were used as indicators of changes required as opposed to absolute deciding factors. The amendments made are addressed specifically below.

The think aloud protocol interviews identified that respondents perceived the SD effectiveness items to be problematic to answer. This was because: (i) respondents were reluctant to disclose commercially sensitive information, or; (ii) because of the cognitive demands of weighting and evaluating the individual objectives of the decision, or; (iii) because the TMT may not have had concrete objectives for the SD. Furthermore, the exploratory analysis conducted on the pilot study data revealed issues concerning the reliability of the SD effectiveness measure, and its Cronbach alpha was 0.67, below the commonly suggested threshold of 0.7 (Nunnally, 1978). Therefore it was decided that Amason's (1996) measure of SD quality would be used in the main data collection because it is a less cognitively taxing alternative to SD effectiveness, and does not require respondents to disclose sensitive confidential information. Furthermore, Amason's (1996) SD quality measure reported a very high level of internal consistency (0.91).

Aside from the issues concerning the reliability and difficulty for respondent's completing the SD effectiveness measure, the exploratory analysis revealed that the mean average score was 6.05 (using a 7 point Likert scale). Whilst this was comparable with Elbanna and Child's (2007a) results for SD effectiveness (5.84, using a 7 point Likert scale), it was clear that there was a tendency for respondents to select successful SDs, which resulted in a lack of variance in the dependent variable. Furthermore, empirical evidence suggests that SDs have a high failure rate (Nutt, 1999), and it is important for research not just to focus on successful SDs, but also on failed or aborted ones (Wilson, 2010). Hence it was decided that for the main data collection attempts must be made to ensure that both successful and unsuccessful SDs were included in the sample.

Changes were also made to three other variables. Procedural rationality item number 3 was re-worded to avoid the confusion following the think aloud protocol interviews. The revised item used a combination of the Dean and Sharfman (1993a; 1996) wording and Elbanna and Child (2007a; 2007b). Furthermore, the think aloud protocol interviews identified some confusion regarding the wording of the third SD familiarity item, and the exploratory analysis revealed that the familiarity construct suffered from a relatively low internal consistency (Cronbach alpha of 0.69) which is slightly lower than the commonly accepted threshold of 0.7 (Nunnally, 1978). As a result the third item of the SD familiarity measure ("To what extent did you initially expect this decision to set parameters for subsequent decisions") was replaced with an item from Dean and Sharfman's (1993a) measure of SD uncertainty: "To what extent was this decision similar to others you have dealt with in the past?" It was intended that these changes would improve the clarity of the questions and improve the reliability of the SD familiarity measure. Finally, the wording of the first time pressure item "this decision put new and strict time pressure on us" was re-worded because of problems identified during the think aloud protocol interviews and because of a relatively low level of internal consistency (Cronbach alpha of 0.59) identified during the pilot study. As a consequence this item was re-worded to "this decision put strict time pressure on the decision-makers".

5.7.6 Summary of Pre-testing of the Questionnaire

This section has described the rigorous pre-testing of the questionnaire that was conducted, which included both think aloud protocol interviews and a pilot study, and outlined the resulting changes that were made.

5.8 Main Data Collection Procedure

The final main and second informant questionnaires are included in appendices 1 and 2. The remainder of section 5.8 describes the main data collection procedures, which include the sample frame selection and administration, attempts to improve the response rates, the actual response rates, and the estimation of non-response error.

5.8.1 Sample Frame Selection and Administration

Section 5.4 of this chapter has already discussed the sample size requirements with regards to the various statistical analysis techniques to be used in the present study. However, another factor to be considered when estimating sample size is the sample sizes of previous empirical work in the domain (Webb, 2001). From the literature review in chapters two and three, a wide range of sample sizes are evident, ranging from a single case study (Langley, 1989; Papadakis et al. 1999) to 749 (Hough and ogilvie, 2005). However, the most directly comparable studies to the present one—being field based, using real SDs (as opposed to hypothetical scenarios) and integrative (measuring multiple process and contextual variables), have sample sizes of 52 SDs (Dean and Sharfman, 1996), 57 SDs (Dean and Sharfman, 1993a), 70 SDs (Papadakis et al. 1998; Papadakis and Barwise, 2002), and 169 SDs (Elbanna and Child, 2007a; 2007b). Generally, however, "much of the most managerially relevant SDM research is based on a fairly small number of cases studied in depth" (Papadakis and Barwise, 1997c, p.296) and there is a need to improve the rigor and substance of research through larger sample sizes and the use of multivariate techniques (Papadakis and Barwise, 1997c).

A further consideration relating to the issue of sample size is that of expected response rate, and again, the extant literature can provide guidelines as to likely response rates. Elbanna and Child (2007a; 2007b) achieved a response rate of 42% using a drop-off and collection method. Papadakis et al. (1998) achieved a response rate of 43% through the sponsorship of academics, consultants, management associations, and personal contacts (Papadakis, 1993). However, some studies (e.g. Dean and Sharfman, 1993a; 1996) do not state the response rates. It should be considered however, that the present study has several significant differences to the Elbanna and Child (2007a; 2007b) and Papadakis et al. (1998) studies in that the method of administration was via mail and email; that two informants were requested, and; some participants were requested to complete the questionnaire in response to an unsuccessful SD. SDM studies adopting a postal survey method of administration have achieved much lower response rates e.g. 6% (Simons et al. 1999), 8.7% (Olson et al. 2007a), and 11.6% Parayitam and Dooley (2009). Hambrick et al. (1993) suggests that a response rate of 10-12% is typical for surveys mailed to TMT members.

It was considered that requesting respondents in the sample frame to complete a questionnaire regarding an unsuccessful SD may limit the response rate. Wilson (2010, p.637) states that one PhD student of his "wanted to study decisions which failed (and they) ended up not getting access at all despite persistent attempts by many of us." Another factor that may diminish the response rate is the economic circumstances facing UK organisations at the time the research was conducted, and Wilson (2010, p.637) emphasises that "in a tough economic climate it becomes even harder to gain the quality access needed for research."

A sample frame of 236 (119 manufacturing sector organisations and 117 service sector organisations) was generated following a pre-qualification phase whereby contact was made with 6,000 UK organisations in both manufacturing and services sectors, with between 50 and 500 employees. A formal letter printed on Aston Business School headed paper was sent (see appendix 2) along with an

overview of the study (see appendix 3) and a participation request form (see appendix 4), requesting that those interested in being part of the sample frame should state one recent successful SD, and one recent unsuccessful SD. It was also explained that two informants would be required from each organisation, and prospective sample frame members were asked for their preferred method of receiving the questionnaires—either via post or email. Once again, the FAME database was used, and the procedure of administration followed that set out in table 5.6.3.4 in this chapter. Once all participation forms had been received back the final sample frame was established and the researcher specified which members of the sample frame should complete questionnaires in relation to a successful SD, and which should complete their questionnaires in relation to an unsuccessful SD. The purpose of this was to maximise the variance in the study's dependent variables, such as SD quality.

5.8.2 Improving Response Rates

The research methodology literature contains a significant amount of guidance for how to maximise response rates (Bryman, 2008; Churchill and Iacobucci, 2005; Diamantopolous and Schlegelmilch, 1997; Dillman, 2000; Lee and Lings, 2008; Mooi and Sarstedt, 2011), and table 5.8.2 summarises the main methods advocated, and those incorporated into the present study.

Table 5.8.2 Summary of Methods to Improve Response Rates

Method	Incorporated into Main Data Collection (Y/N)
Pre-notification (e.g. letter, telephone call)	Y
Follow-ups and repeated contacts	Y
Sponsorship (e.g. company, trade association, university)	Y (Aston Business School—Aston University)
Appeals of help (e.g. altruism, social unity)	Y
Provision of reply paid envelop	Y
Return postage paid	Y
Personalisation (i.e. addressed specifically to the intended respondent)	Y
Monetary incentive	N
Non-monetary incentive (e.g. summary of results of the survey, charitable donation)	Y
Guarantee of anonymity	Y
Questionnaire shorter than 4 pages	N
Personally signed covering letters	Y
Specification of date for returning questionnaires	Y

Of the methods detailed in table 5.8.2, all were adopted with the exception of offering a monetary incentive, and restricting the length of the survey to four pages. Whilst this approach is advocated by Dillman (2000), it was considered that to be able to offer a monetary incentive that would actually motivate senior executives, would be extremely expensive. Furthermore, many organisations have strict ethical codes of conduct that prevent executives from receiving gifts and monetary payment. Instead, respondents were told that a charitable donation of £1 would be made to a charity of their choice for each fully completed questionnaire received back. The respondents were provided with a choice of four different charities. Whilst shortening the length was advocated by the think aloud protocol interviewees, restricting the survey to four pages would severely limit the scope of the present study to such an extent that the research objectives would no longer be achievable.

All members of the final sample frame were telephoned in person to thank them for returning the form and agreeing to become part of the sample frame, to inform them that the questionnaires would be sent imminently, and to clarify which SD the questionnaires needed to be completed in relation to. As

per table 5.6.3.4 in this chapter, several additional contacts were made to maximise the final response rate. A letter (see appendix 5)—or email—depending on the method requested by the respondent, was also sent with the questionnaires again clarifying the SD which the questionnaires needed to be completed in relation to. In the case of mailed surveys, pre-paid response envelopes were also included. Two weeks after sending the questionnaires, all non-respondents (both main and second informants) were contacted by email or telephone to remind them to complete the questionnaire. Following Dillman (2000), reminder letters (see appendix 6) were sent approximately four weeks after the questionnaires had first been sent, and 6 weeks from the initial dispatch of the questionnaires replacement ones were sent. A final round of reminder emails and telephone calls were made approximately 8 weeks after the questionnaires were first issued.

5.8.3 Response Rate

A total of 194 main informant questionnaires were received back, and for 135 of these a second informant questionnaire was also received. 25 of the main informant questionnaires were deemed to be not useable. This was because they were either: (i) found to be in relation to an old SD; (ii) relate to a decision which was not deemed to be strategic (e.g. launch of a new company car scheme, move to new company mobile phone network provider), or; (iii) where the respondent had either rated their involvement in the SD or confidence in answering the questionnaire as below 4 (on a 7 point Likert scale) (Bello et al. 2010). Although "recollections are less likely to be distorted when they are referenced to a discrete event" (Amason, 1996, p.130), consistent with prior studies (e.g. Elbanna and Child, 2007a; 2007b), old SDs were omitted. Furthermore, T-tests were performed across all of the variables in the study comparing the 25 non-useable cases to the 169 remaining useable responses. Significant (at the 0.05 level) differences were identified for intuition, SD familiarity, SD uncertainty, and power decentralisation. Therefore it was decided that only the useable 169 main informant, and 117 corresponding second informant questionnaires be used for the regression analysis. It was not possible to obtain a second informant for every main informant questionnaire owing to factors such as

other decision-makers being unwilling to help, or not having the time to assist. Furthermore, the completion of questionnaires in respect of failed SDs was evidently a sensitive issue—and even in instances where a main informant was willing to do so, they were unable to obtain a colleague willing to complete the second informant questionnaire because of the sensitive nature of the subject. One main informant stated that he had been unable to obtain a second informant because the other decision-makers were all either "too embarrassed or concerned about confidentiality". There were no instances of missing data because the researcher was able to contact participants directly to obtain the required data in such instances. The responses received are summarised in table 5.8.3 below.

Table 5.8.3 Response Rate

	Number	**Percentage**
Sample frame	236	-
Main Informant Questionnaires	194	82%
Second Informant Questionnaires	135	70% (as a % of 194)
Useable Main Informant Questionnaires	169	72%
Useable Second Informant Questionnaires	117	69% (as a % of 169)

Therefore the present study uses a sample of 169 main informant questionnaires and 117 corresponding second informant questionnaires, representing a response rate of 72%. The high response rate was achieved through the pre-qualification procedures used to establish the sample frame, through the personal contact made (via telephone) prior to sending the questionnaires, and through the repeated personal follow up contacts via telephone, email and mail together with replacement questionnaires being sent. The repeated follow up contacts made a significant difference to the overall response rate because until the first wave of reminder phone calls and emails were sent; only 80 main respondent questionnaires had been received, representing a response rate of 34%.

5.8.4 Estimating Non-Response Error

Non-response error (or non-response bias) occurs when a study fails to obtain information from the sample (Churchill and Iacobucci, 2005). The risk that non-response error poses is that there may be uncaptured differences between non-respondents and respondents, and hence the confidence with which generalisations can be made to the general population are severely restricted (Churchill and Iacobucci, 2005). Armstrong and Overton (1977) suggest that late respondents have more in common with non-respondents, and that by comparing early and late respondents, an estimation as to the degree of non-response bias can be made. T-tests were performed on every variable captured in the present study for the first 50% of respondents and the last 50% of respondents, and no significant differences were identified at the 5% level of significance. Hence these results demonstrate no evidence of non-response error.

5.8.5 Summary of Main Data Collection Procedure

This section has described the procedures employed in the main data collection, and highlighted how the sample frame was selected and administered, the attempts made to improve response rates, the actual response rates achieved, and the estimation of non-response bias.

5.9 Data Analysis Considerations

Statistical tests can be either parametric, or non-parametric. Parametric tests are generally recommended because of their robustness—non-parametric tests make fewer assumptions about the distribution of the data, and can be less powerful compared to parametric tests (Field, 2013). Hence in the present study parametric tests were used.

Another consideration is the level of significance to be adopted. In statistical testing, there is a risk of type I (α) errors (true null hypothesis is rejected falsely), or type II (β) errors (a false null hypothesis is not rejected). Type I errors can be addressed by determining a level of significance—the probability that a type I error can occur, and such probabilities are typically set to 0.01, 0.05 or 0.10 (Mooi and Sarstedt, 2011). Therefore, if the significance level is set to 0.05, the researcher allows for a maximum risk that 5% of the time, the null hypothesis may be mistakenly rejected. The level of 0.05 is most commonly used (Field, 2013; Mooi and Sarstedt, 2011). Lower levels are not commonly used because they give rise to a greater risk of type II errors occurring (Mooi and Sarstedt, 2011). Hence, in keeping with traditions (Field, 2013), the present study adopts a 0.05 level of significance.

The remainder of section 5.9 will discuss the key considerations relating to the choice of multiple regression analysis, exploratory factor analysis, and confirmatory factor analysis as the major data analysis techniques used in the present study.

5.9.1 Multiple Regression

Multiple regression analysis is a multivariate statistical technique that allows the researcher to examine the relationship between one variable (the dependent variable), and several independent variables (Tabachnick and Fidell, 2013). Multiple regression analysis is therefore useful to address: (i) how well a set of independent variables predict a dependent variable; (ii) which variable in a group of variables best predicts the outcome variable, and; (iii) whether a specific variable is able to predict the dependent variable when the effects of other variables are controlled for (Pallant, 2010). An alternative multivariate technique is structural equation modelling (SEM) which is well suited to testing integrative models of the SDMP (Papadakis et al. 1998). SEM involves the simultaneous estimation of relationships between constructs, allowing for an assessment of measurement error, unlike multiple regression analysis (Mooi and Sarstedt, 2011). However, its use in the present study was precluded due to the sample size, and because many of the study measures comprised a large

number of items—SEM is better suited to scales with few items. A minimum of 200 cases is often cited to carry out SEM, and other estimates suggest a ratio of 10 cases for every parameter to be estimated (Bentler and Chou, 1987)—this would have necessitated a sample size of approximately 400 in order to test the effects of all contextual variables on SDMP characteristics (hypotheses 1-4). Hence given the traditions in the SDMP domain of literature, where multiple regression analysis is prevalent, and the nature of the hypotheses set out in chapter 4, multiple regression analysis is ideally suited to addressing the research questions of the present study.

5.9.2 Regression Methods

There are three types of multiple regression analysis—standard (also referred to as forced entry or simultaneous), hierarchical (also referred to as sequential), and stepwise (Field, 2013; Pallant, 2010; Tabachnick and Fidell, 2013). In standard multiple regression analysis all independent variables are entered simultaneously, and can allow researchers to observe which independent variable explains the most unique variance in the dependent variable (Pallant, 2010). Hierarchical multiple regression analysis enables the researcher to enter the independent variables into the regression equation in a specified order, based on a theoretical rationale (Tabachnick and Fidell, 2013). Variables (or blocks of variables) are entered in steps to allow the researcher to assess how much each variable or block of variables adds to the prediction of the dependent variable having controlled for the previous independent variables (Pallant, 2010). Stepwise multiple regression analysis relies on the statistical software to select which variables are entered and the sequence by which they are entered (Pallant, 2010). Stepwise multiple regression analysis is considered to be a controversial method, and best suited to exploratory research (Pallant, 2010; Tabachnick and Fidell, 2013). The present study utilises both standard multiple regression analysis and hierarchical multiple regression analysis to examine the hypotheses (see chapter 8).

5.9.3 Assumptions of Multiple Regression Analysis

Multiple regression analysis requires a number of assumptions about the data to be met, which are summarised below, drawing on several methodological texts including Field (2013), Mooi and Sarstedt (2011), Pallant (2010), and Tabachnick and Fidell (2013). Assumptions surrounding sample size have already been addressed in section 5.4 of this chapter.

1. Both independent and dependent variables should be quantitative or metric (ratio or interval) and dependent variables should be free from constraints.

2. Multicollinearity and singularity must not be present—this is where the independent variables are highly correlated (multicollinearity) or where an independent variable is a combination of other independent variables (singularity);

3. Outliers—multiple regression analysis is sensitive to extreme low or high scores;

4. Normality—residuals, which are differences (errors) between the values predicted by a model and the values observed in the data (Field, 2013), should be normally distributed;

5. Linearity—residuals should have a straight line relationship with predicted dependent variable scores;

6. Homoscedasticity—variance of residuals about predicted dependent variable scores should be the same for all predicted scores.

7. Independence of errors—errors of prediction should be independent of one another

In all of the multiple regression models in the present study, the above assumptions are checked and are reported in Chapter 8.

5.9.4 Exploratory Factor Analysis

The present study also utilises exploratory factor analysis (EFA)—a data reduction technique which "takes a large set of variables and looks for ways the data may be 'reduced' or summarised using a smaller set of factors or components" (Pallant, 2010, p.181). Hence variables which are correlated yet independent to other subsets of variables are combined into factors. EFA was used in the present study to assess the construct validity of the measures (Elbanna, 2010; Elbanna and Child, 2007a; 2007b). The most commonly used method of extracting factors is principal components analysis (PCA) (Pallant, 2010), which is also considered to be the most appropriate method when the objective is to reduce a large set of variables to a smaller series of factors (Tabachnick and Fidell, 2013). Furthermore, empirical research has highlighted that there is little difference in the results produced by PCA and factor analysis (Field, 2013). Hence, the current study utilises PCA.

Another key consideration when using EFA is the type of rotation. Factor rotation "presents the pattern of loadings in a manner that is easier to interpret...(and) shows you which variables clump together" (Pallant, 2010, p.184-185). Two types of rotation exist—orthogonal (which assumes that factors are uncorrelated), and oblique (which assumes correlated factor solutions). In the present study both types were used as recommended by Pallant (2010), although the final results reported are from the orthogonal rotations because the results are easier to report and interpret (Tabachnick and Fidell, 2013). Furthermore, the Varimax orthogonal rotation was used as it is the most common and minimises the number of variables that have high loadings on each factor (Pallant, 2010).

5.9.5 Confirmatory Factor Analysis

The present study also utilises confirmatory factor analysis (CFA), which is similar to exploratory factor analysis, except that it is driven by a priori expectations, and examines relationships between indicators and factors (Brown, 2006). Its prime use in the present study is to determine the discriminant validity of the constructs. Discriminant validity was assessed using the Fornell and

Larcker (1981) procedure, which compares the average variance extracted of each construct to its shared variance with other constructs. The results of the CFA are detailed in chapter 6.

5.9.6 Summary of Data Analysis Considerations

This section has outlined the major considerations relating to the choice of multiple regression analysis, exploratory factor analysis, and confirmatory factor analysis as the data analysis techniques used in the present study.

5.10 Summary of Methodology

This chapter has outlined the methodology chosen to address the research questions and hypotheses specified in chapter 4. Following an exploratory phase of research where semi-structured interviews were undertaken with 30 TMT members, a measurement instrument—in the form of a self-report questionnaire, was designed and administered to a sample of senior executives. The instrument was designed based on established research practices, and through thorough pre-testing. Pre-testing involved four think aloud protocol interviews with MDs, and the collection of 71 fully useable questionnaires from a sample frame of 500 organisations. For the main data collection, questionnaires were sent to a sample of 236 UK based services and manufacturing organisations, employing between 50 and 500 employees. A total of 169 fully useable main informants' questionnaires, and 117 second informant questionnaires were received back, for a response rate of 72%. These questionnaires were deemed suitable for further analysis, and this is detailed in the chapters 6-8. Finally, this chapter has outlined the main data analysis techniques used, and provide a discussion of the considerations relating to their use.

The following chapter (chapter six) goes on to describe the data from the present study, chapter 7 details the development and test of the TMT expertise measure, and chapter 8 presents the results of

the hypotheses testing. Finally, chapter 9 presents the overall findings and conclusions from the present study.

CHAPTER 6 – DESCRIPTIVE ANALYSIS

6.1 Introduction

Having described in detail the methodology employed to collect the data; the present chapter describes the data, and is divided into two main parts. In the first part of this chapter (section 6.2), the data is described in terms of the profiles of the informants, the organisations, and the SDs featured in the sample. Sections 6.3 to 6.9 present a detailed and rigorous examination of the existing measures used in the present study to capture data pertaining to SDMP characteristics, SDMP outcomes, TMT characteristics, SD specific characteristics, the external environment, and firm characteristics. It should be noted that the newly developed TMT expertise measure is examined separately in chapter 7. In sections 6.3 to 6.7 the reliability and validity of the measures are examined, and in sections 6.8 and 6.9 the mean averages for the measures, together with their correlations are presented.

6.2 Respondent Analysis

Table 6.2.1 describes the position of the main informants, who were all TMT members with significant involvement in the making of the SD. Table 6.2.2 describes the position of the second informant, who similarly were all TMT members who had been extensively involved in the making of the SD. The job titles in tables 6.2.1 and 6.2.2 are the most senior positions in UK organisations, and indicate that the informants were all appropriate and well qualified to provide detailed information concerning the SDMP in their organisation. The sampling of different TMT members, as opposed to solely focusing on the CEO, is consistent with the approach taken in prior SDMP studies (e.g. Dean and Sharfman, 1993a; 1996; Elbanna and Child, 2007a; 2007b; Goll and Rasheed, 2005; Hitt and Tyler, 1991; Shrivastava and Grant, 1985).

Table 6.2.1 Summary of Main Informant's Positions

Position	Frequency	Percentage
CEO/MD	92	54%
Director (e.g. Finance, Operations, Marketing, Human Resources)	50	30%
Chairman	15	9%
Chief Officer (e.g. Chief Finance Officer, Chief Operating Officer, Chief Strategy Officer)	9	5%
Other (e.g. Strategy Partner, General Manager)	3	2%
TOTAL	**169**	**100%**

Table 6.2.2 Summary of Second Informant's Positions

Position	Frequency	Percentage
Director (e.g. Finance, Operations, Marketing, Human Resources)	91	78%
CEO/MD	12	10%
Chief Officer (e.g. Chief Finance Officer, Chief Operating Officer)	6	5%
Chairman	6	5%
Vice-President	2	2%
TOTAL	**117**	**100%**

As previously discussed in chapter 5, the sample included both services and manufacturing organisations. Table 6.2.3 describes the manufacturing industry sectors represented in the sample, and table 6.2.4 describes the services sectors included in the sample. As is evident in table 6.2.3, a broad array of manufacturing sectors are represented, with electrical equipment (17%) and metals and engineering (15%) the two largest sectors represented in the sample. This is broadly comparable to Elbanna (2010) who reported 12.4% of the sample as being electrical equipment manufacturers, and metals and engineering organisations as being 11.2% of the sample. In table 6.2.4 it is evident that professional services, retail and wholesale, and financial services together comprise nearly 50% of the services sector firms included in the sample; all of which are major UK service sector industries which enhances the generalisability of the findings from this study.

Table 6.2.3 Manufacturing Industry Sectors Represented in the Sample

Industry Sector	Frequency	Percentage
Chemicals	8	9%
Electrical equipment	15	17%
Food and beverage	6	7%
Furniture and wood products	7	8%
Metals and engineering	13	15%
Printing and reproduction of recorded media	5	6%
Rubber, paper, and plastic	8	9%
Textiles and clothing	4	4%
Transport equipment	4	4%
Other manufacturing (e.g. publishing activities, specialised construction activities, manufacture of coke and refined petrol, mineral products)	19	21%
TOTAL	**89**	**100%**

Table 6.2.4 Services Industry Sectors Represented in the Sample

Industry Sector	Frequency	Percentage
Professional services	15	19%
Retail and wholesale	16	20%
Financial services	8	10%
Engineering	10	13%
Residential care	3	4%
Scientific Research and Development	3	4%
Other services (e.g. repair and installation of machinery, travel agency, warehousing, collection/treatment and disposal of waste, land transport)	25	31%
TOTAL	**80**	**100%**

The sample controlled for firm size, and as detailed in chapter 5, organisations employing between 50 and 500 employees were included in the final sample frame. A summary of the informant's organisations, by employee size is detailed in table 6.2.5. The mean average number of employees of the sample is 177, with 66% of the organisations employing 50 to 200 employees. Hence, the majority of the organisations featured in the present sample are medium size. This may limit the comparability of the findings in the present study with prior empirical SDMP studies, because these have sampled relatively large firms e.g. Elbanna and Child (2007a; 2007b) had only 44% of organisations with between 100 and 199 employees (none with fewer than 100 employees), Papadakis et al. (1998) sampled organisations with more than 300 employees (and the mean size of organisations

in their sample was 730 employees), and Dean and Sharfman (1996) included organisations with up to 6,600 employees.

Table 6.2.5 Summary of Firm Sizes

Size (Number of Employees)	Frequency	Percentage
50-200 (Medium size)	112	66%
201-500 (Large size)	57	34%
TOTAL	**169**	**100%**

Using objective secondary data in the FAME database, it was also possible to capture the year of incorporation of the organisations in the sample, and subsequently calculate their age at the time of making the SD. Table 6.2.6 describes the organisations in the sample according to their age at the time that the SD was made.

Table 6.2.6 Summary of the Age of the Organisations in the Sample

Age (in years)	Frequency	Percentage
1-10	62	37%
11-25	54	32%
26-50	30	18%
51-75	12	7%
76-100	8	5%
100+	3	2%
TOTAL	**169**	**100%**

Consistent with prior SDMP studies (e.g. Elbanna and Child, 2007a; 2007b; Papadakis et al. 1998; Dean and Sharfman, 1996), the present study captured the type of SD, which is summarised in table 6.2.7.

Table 6.2.7 Summary of Types of Strategic Decision in the Sample

Strategic Decision Type	Frequency	Percentage
New strategy (e.g. new marketing strategy, new distribution strategy, new expansion strategy)	34	20%
Launch of new product or service	31	18%
Restructuring (including re-financing and Management Buy-Outs)	30	18%
Acquisition/Disposal/Joint Venture/Merger	28	17%
New Market Entry or Exit from a Market	25	15%
Investment (e.g. in new premises, new technology, new equipment)	14	8%
Significant change to internal processes (e.g. outsourcing of production)	4	3%
Diversification	3	2%
TOTAL	**169**	**100%**

In some respects the types of SDs in the present study are broadly comparable to existing studies e.g. Elbanna (2010) reports a sample with 22.5% of SDs being related to the introduction or discontinuation of a product—similar to the 18% in the present study. Similarly, Elbanna (2010) reports that 19% of his sample relates to new marketing strategy SDs, which is comparable to the 20% in the present study. However, there are also some significant differences, in the present study 18% of SDs pertain to restructuring—whereas only 13% of Elbanna's (2010) sample related to restructuring. This could be attributable to the period in which the present study was conducted—many of the SDs in the sample were taken whilst the UK was in a recession and enduring a period of prolonged and unprecedented economic uncertainty. Also, Dean and Sharfman (1996) report 19% of their SDs as relating to restructuring, which is similar to the present study (18%), and they also report 19% of their SDs as being related to new product launches which is again comparable to the present study (18%). The types of SDs included in the present study are also similar to those of Papadakis et al. (1998), and their sample included acquisitions, mergers, investment in capital equipment, new product introductions and internal reorganisations. It should be noted however, that Dean and Sharfman (1996), Elbanna (2010), and Papadakis et al. (1998) all focused on the manufacturing sector exclusively, whereas the present study included both manufacturing and services organisations.

It was also possible to capture the number of participants who had a major involvement in the making of the SD, and these statistics are presented in table 6.2.8. Whilst the size of the SDM team is not widely reported in the literature, Clark and Maggitti (2012) report a mean average size of 5.5, and Olson et al. (2007a) report a mean team size of 4.79. Both of which are consistent with the present study which has a mean average team size of 5.54, and mode average of 4.

Table 6.2.8 Summary of Number of Participants in the Strategic Decisions

Number of Participants	Frequency	Percentage (%)
1-4	81	48%
5-9	73	43%
10-25	15	9%
TOTAL	**169**	**100%**

Finally, as outlined in chapter 5, two key incentives were offered to main informants in order to motivate them to participate and thus maximise response rates—a copy of a report of the findings of the study, and a donation to a charity of their choice to be made on their behalf. The descriptive statistics shown in table 6.2.9 suggest that both of these incentives were effective in motivating informants, and in particular, the charitable donation.

Table 6.2.9 Summary of Response to Incentives Offered

Incentive	Response	Frequency	Percentage
Management Report	Yes	135	80%
	No	34	20%
TOTAL		**169**	**100%**
Charitable Donation	Yes	162	96%
	No	7	4%
TOTAL		**169**	**100%**

6.2.1 Summary of Respondent Analysis

This section has described the data collected in terms of the informants and their positions; the organisations—in terms of their industry, size, and age; and has also described the types of SDs featured in the final sample, as well as the number of participants in the SDs. The following sections of this chapter examine the validity and reliability of the previously developed scales used in the present study.

6.3 Assessment of Previously Developed Scales

Multi-item scales must be examined for their dimensionality, reliability, and validity (Hair et al. 2008). Following a brief overview of dimensionality, reliability and validity, sections 6.4 to 6.7 provide a rigorous assessment of the scales used in the present study.

6.3.1 Dimensionality

Researchers should assess whether the scale items are strongly associated with each other and represent a single concept, or not (Hair et al. 2008). Whilst a lack of unidimensionality provides evidence of a lack of construct validity (if the construct definition is unidimensional), acceptable unidimensionality alone does not guarantee the validity of the measure (Peter, 1981).

6.3.2 Validity

Validity is a "term applied to measuring instruments reflecting the extent to which differences in scores on the measurement reflect true differences among individuals, groups, or situations in the characteristic that it seeks to measure, or reflect true differences in the same individual, group, or situation from one occasion to another, rather than constant or random errors" (Churchill and

Iacobucci, 2005, p.681). Hence, a measure is valid if it accurately captures variation in the latent construct (Lee and Lings, 2008).

The present study adopts several methods to establish measurement validity, which are detailed below:

1. Face validity (or content validity) is how well a measure represents a specific area of content (Lee and Lings, 2008). Establishing face validity is an inherently intuitive process (Bryman, 2008), and is concerned with defining the construct and establishing whether the items relate closely to the definition. Hence, face validity is usually achieved before the actual measurement (Mooi and Sarstedt, 2011). Because all of the measures (except TMT expertise) were published in international peer reviewed journals graded as 4 or 4* in the 2010 Association of Business Schools journal rankings guide and have been subject to rigorous development and testing, face validity was assumed. Furthermore, the think aloud protocol interviews carried out with 4 TMT members and a review of the instrument by several senior academics familiar with SDMP theory and research methodology provides further comfort over the face validity of the measures used in the present study.

2. Criterion-related validity (predictive validity) is a test of whether a measure accurately predicts the value of some criterion (Lee and Lings, 2008). Predictive validity requires collecting data at two points in time, whereas criterion-related validity measures the data at the same time (Mooi and Sarstedt, 2011). An absence of external criterion variables with which to compare the scores from the questionnaire means that a limitation of the present study is the inability to establish criterion-related validity.

3. Construct validity (nomological validity) is the extent to which a construct is related in a theoretically predicted way with measures of different but related constructs. Hence assessing this

form of validity requires a researcher to specify theoretical relationships between focal constructs (Lee and Lings, 2008). Because all of the measures (except TMT expertise) were published in international peer reviewed journals graded as 4 or 4* in the 2010 Association of Business Schools journal rankings guide and have been subject to rigorous development and testing, construct validity was assumed.

4. Convergent and discriminant validity. Convergent validity assesses the degree to which two measures of the same concept are related (Hair et al. 2008), and discriminant validity assesses whether measures that are supposed to be unrelated, are in fact unrelated. In the present study, exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) are utilised to establish convergent and discriminant validity. The results of the EFA and CFA are presented together with discussion in sections 6.4 and 6.5 of this chapter.

6.3.3 Reliability

Reliability is defined as the "similarity of results provided by independent but comparable measures of the same object, trait, or construct" (Churchill and Iacobucci, 2005, p.679). Fundamentally, reliability is concerned with the consistency of a measure of a concept (Bryman, 2008). Reliability is assessed in the present study in the following ways:

1. Internal consistency—multiple variables are used to measure the same thing simultaneously, and then assessed for how strongly and positively they relate to one another (Mooi and Sarstedt, 2011). Cronbach's alpha (Nunnally, 1978) is a commonly used measure of internal consistency deployed in the social sciences (Bryman, 2008), and DeVellis (2003) provides guidelines for the acceptability of differing Cronbach alphas scores, as shown in table 6.3.3.

Table 6.3.3 Acceptability of Cronbach Alpha Internal Consistency Scores

Value of Coefficient Alpha	Acceptability of Value
< 0.6	Unacceptable
0.6-0.65	Undesirable
0.65-0.7	Minimally acceptable
0.7-0.8	Respectable
0.8-0.9	Very good
> 0.9	Consider shortening scale

In the present study, Cronbach's alpha is used to assess the internal consistency of all measures, and these are reported in section 6.4 of this chapter.

2. Inter-rater Reliability—multiple different people (often experts or judges) are used to provide a rating, and their answers are examined to see how closely related they are (Mooi and Sarstedt, 2011). Hence, in the case of strategy research, multiple different informants from the same organisation are used to provide ratings of the same measures (e.g. Dean and Sharfman, 1993b; Olson et al. 2007a; Simsek et al. 2005). In the present study, two informants provided independent ratings for the five SDMP characteristics and the four SDMP outcomes. Their ratings were compared and the relatedness determined using a variety of methods commonly used in the literature. The results of these procedures are detailed in section 6.6 of this chapter.

6.4 Exploratory Factor Analysis and Internal Consistency

Exploratory factor analysis (EFA) was conducted on the previously developed scales, and measure purification was undertaken as a result. The EFA was conducted using the IBM SPSS Statistics 20 package.

To determine the appropriateness of the items for EFA, two criteria were applied to the scales: (i) Bartlett's test of sphericity, and (ii) the Kaiser Mayer-Olkin (KMO) measure of sampling adequacy. Bartlett's test of sphericity measures the presence of correlations amongst scale variables, and estimates the probability that the correlation matrix has significant correlations amongst some of its variables. Hence, a significant result for the Bartlett test of sphericity implies that the correlation matrix is not orthogonal and is appropriate for factoring (Sharma, 1996). The KMO test is a measure of sampling adequacy (Mooi and Sarstedt, 2011) and can produce values between 0 and 1. Kaiser (1974) recommends certain threshold values for KMO scores, as shown in table 6.4.

Table 6.4 Threshold Values for KMO

KMO Value	Adequacy of the Correlation
< 0.5	Unacceptable
0.5-0.59	Miserable
0.6-0.69	Mediocre
0.7-0.79	Middling
0.8-0.89	Meritorious
> 0.9	Marvellous

(Adapted from Mooi and Sarstedt, 2011)

Each item was subsequently examined for the loading produced on the extracted factors. A minimum value of 0.3 was used in most cases as the lower boundary for significance, because it is commonly considered a threshold to produce significant and reliable results (Spector, 1992). As previously discussed in chapter 5, principal components analysis was employed to conduct the EFA, using Varimax orthogonal rotation.

The following sections (6.4.1 to 6.4.5) provide the results of the exploratory factor analysis and assessment of the internal consistency of the measures used in the present study. It should be noted that the TMT expertise EFA and test for internal consistency are covered in chapter 7. Furthermore,

because TMT power decentralisation and the firm characteristic external control are single item measures, these were neither subject to EFA nor an assessment of internal consistency. Similarly, the remaining three firm characteristics; size, performance, and slack resources were operationalised using objective secondary data and it was therefore not possible to perform EFA or an assessment of the internal consistency of these variables.

6.4.1 Exploratory Factor Analysis and Internal Consistency: SDMP Characteristics

Procedural rationality was measured using a 5 item scale adapted from Dean and Sharfman (1993a; 1993b; 1996) and Elbanna and Child (2007a; 2007b). Cronbach's alpha was 0.81, which is considered to be very good (DeVellis, 2003). EFA results for the procedural rationality measure are shown in table 6.4.1.1.

Table 6.4.1.1 EFA Results for Procedural Rationality

Item	Factor Loading
1. Looking for relevant information	0.850
2. Analysing relevant information	0.893
3. Using analytical techniques	0.611
4. Effectiveness at focusing on crucial information	0.716
5. Overall process	0.778

Bartlett's test of sphericity is significant (0.000), and the KMO score of 0.763 is considered to be acceptable (Kaiser, 1974). 60% of the variance is explained by the single factor, and a visual inspection of the scree plot also supports a single factor solution.

Comprehensiveness was measured using Miller et al's (1998) five item scale. The Cronbach alpha of this scale was 0.91, which is considered to be very good, and there may even be scope for shortening

the scale (DeVellis, 2003) although this is beyond the scope of the present study. EFA results for comprehensiveness are shown in table 6.4.1.2.

Table 6.4.1.2 EFA Results for Comprehensiveness

Item	Factor Loading
1. Developing alternative courses of action	0.805
2. Considering multiple criteria	0.845
3. Examining multiple explanations	0.835
4. Searching for alternatives	0.877
5. Examining courses of action	0.906

Bartlett's test of sphericity is significant (0.000), and the KMO score of 0.843 is considered to be more than acceptable (Kaiser, 1974). 73% of the variance is explained by the single factor, and a visual inspection of the scree plot also supports a single factor solution.

As identified in chapter 2, rationality and comprehensiveness have been used inter-changeably in the literature, despite significant differences in their definition and operationalisation. Hence EFA and a test of internal consistency was performed using items from both the procedural rationality and comprehensiveness measures to examine the underlying factor structure of these different SDMP characteristics. The Cronbach alpha of the combined procedural rationality and comprehensiveness items is 0.90, suggesting a high degree of internal consistency and that the items are highly related to one another. The results of the EFA for both procedural rationality and comprehensiveness measures are shown in table 6.4.1.3.

Table 6.4.1.3 EFA Results for Procedural rationality and Comprehensiveness Combined

Item	Factor 1 Loadings	Factor 2 Loadings
1. Looking for relevant information	0.815	
2. Analysing relevant information	0.880	
3. Using analytical techniques	0.392	0.444
4. Effectiveness at focusing on crucial information	0.777	
5. Overall process	0.636	0.415
6. Developing alternative courses of action		0.821
7. Considering multiple criteria	0.404	0.738
8. Examining multiple explanations	0.437	0.701
9. Searching for alternatives		0.877
10. Examining courses of action		0.878

Bartlett's test of sphericity is significant (0.000), and the KMO score of 0.87 is considered to be more than acceptable (Kaiser, 1974). 54% of the variance is explained by the single factor solution, whereas 68% of the variance is explained by a two factor solution. Furthermore, a visual inspection of the scree plot also supports a two factor solution. There are however two comprehensiveness items that load onto both factors, albeit that the two items loading onto factor 1 do so much less significantly than they load onto factor 2. Also, two procedural rationality items load onto factor 2, and item 3 actually loads onto factor 2 more significantly than it loads onto factor 1. Hence, whilst the results present a degree of comfort concerning the discriminant validity of these two constructs, CFA will be utilised in section 6.5 of this chapter to determine whether the average variance extracted from each of these constructs is greater than their shared variance (Fornell and Larcker, 1981).

Behavioural integration was measured using a 9 item scale adapted from Simsek et al. (2005), Lubatkin et al. (2006), and Carmeli and Schaubroeck (2006). Its Cronbach alpha of 0.91 indicates a high level of internal consistency, and that the scale may even have scope for being shortened (DeVellis, 2003). EFA results for behavioural integration are shown in table 6.4.1.4.

Table 6.4.1.4 EFA Results for Behavioural Integration

Item	Factor Loading
1. Volunteering to manage the workload	0.649
2. Switching responsibilities	0.762
3. Helping each other to meet deadlines	0.834
4. Letting others know effects of actions	0.815
5. Understanding joint problems and needs	0.768
6. Discussing expectations	0.707
7. Exchange of high quality ideas	0.844
8. Exchange of high quality solutions	0.832
9. Creative and innovative dialogue	0.810

An initial EFA produced a two factor solution, which is inconsistent with the extant theory which suggests either a three factor solution (Lubatkin, 2006; Simsek et al. 2005) or a single factor solution (Carmeli and Schaubroeck, 2006). It was decided that a single factor solution was most desirable, as opposed to modelling behavioural integration as a three factor meta-construct, so as to avoid the problems associated with formative measures (Cadogan and Lee, 2013). Hence a subsequent EFA was performed, specifying a single factor solution based on a priori theoretical rationale (Mooi and Sarstedt, 2011). The results of the EFA single factor solution show that Bartlett's test of sphericity is significant (0.000), and the KMO score of 0.884 is considered to be more than acceptable (Kaiser, 1974). 61% of the variance is explained by the single factor, and a visual inspection of the scree plot also supports a single factor solution.

Intuition was measured using an adapted version of Dayan and Elbanna's (2011) scale, which achieved a Cronbach alpha of 0.86, which is considered to be very good (DeVellis, 2003). EFA results for intuition are shown in table 6.4.1.5.

Table 6.4.1.5 EFA Results for Intuition

Item	Factor Loading
1. Reliance on personal judgment	0.679
2. Dependence on gut feeling	0.892
3. Trusting hunches	0.836
4. Faith in initial feelings	0.704
5. Emphasis on feelings	0.862

Bartlett's test of sphericity is significant (0.000), and the KMO score of 0.826 is considered to be more than acceptable (Kaiser, 1974). 64% of the variance is explained by the single factor, and a visual inspection of the scree plot also supports a single factor solution.

Finally, political behaviour was measured using a 7 item scale adapted from Dean and Sharfman (1993b; 1996) and Elbanna and Child, (2007a). The measure achieved a Cronbach alpha of 0.74, which is considered to be respectable (DeVellis, 2003). An initial EFA unexpectedly showed political behaviour items loading on two factors, which is inconsistent with the single factor structure previously established for this measure (Dean and Sharfman, 1993b; Elbanna and Child, 2007a). Hence a subsequent EFA was performed, and a single factor structure was specified base on a priori theoretical rationale (Mooi and Sarstedt, 2011). The EFA results for political behaviour are shown in table 6.4.1.6.

Table 6.4.1.6 EFA Results for Political Behaviour

Item	Factor Loading
1. Preoccupation with individual interests	0.543
2. Openness about interests and preferences	0.692
3. Use of power	0.552
4. Bargaining	0.629
5. Alliance formation	0.663
6. Hiding and distortion of information	0.780
7. Variation in points of view	0.625

Bartlett's test of sphericity is significant (0.000), and the KMO score of 0.765 is considered to be acceptable (Kaiser, 1974). 42% of the variance is explained by the single factor, which is relatively low compared to the other SDMP characteristics—however, a visual inspection of the scree plot strongly supports a single factor solution, and hence it was decided to retain the single factor solution for political behaviour.

6.4.2 Exploratory Factor Analysis and Internal Consistency: SDMP Outcomes

SD quality was measured using Amason's (1996) 3 item measure, and achieved a Cronbach alpha of 0.93, which is considered to very good, and may require shortening (DeVellis, 2003). However, given the parsimonious nature of the scale, it was decided that all three items would be retained. EFA results for SD quality are shown in table 6.4.2.1.

Table 6.4.2.1 EFA Results for Strategic Decision Quality

Item	Factor Loading
1. Quality of decision relative to its original intent	0.925
2. Quality of decision given its effect on company performance	0.928
3. Overall quality of decision	0.967

Bartlett's test of sphericity is significant (0.000), and the KMO score of 0.716 is considered to be more than acceptable (Kaiser, 1974). 88% of the variance is explained by the single factor, and a visual inspection of the scree plot also supports a single factor solution.

Implementation success was measured using Noble and Mokwa's (1999) five item scale, and achieved a very high Cronbach alpha of 0.93, which indicates that the scale may require shortening (DeVellis, 2003). The EFA results for implementation success are shown in table 6.4.2.2.

Table 6.4.2.2 EFA Results for Implementation Success (Original Five Item Measure)

Item	Factor Loading
1. Example of effective implementation	0.799
2. Implementation effort	0.880
3. Considered a success in the company	0.938
4. Considered a success by decision-makers	0.902
5. Considered a success in respondent's area of the company	0.912

Bartlett's test of sphericity is significant (0.000), and the KMO score of 0.843 is considered to be more than acceptable (Kaiser, 1974). 79% of the variance is explained by the single factor, and a visual inspection of the scree plot also supports a single factor solution. However, as detailed in section 6.5 of this chapter, the implementation success measure failed to achieve sufficient discriminant validity in respect of the SD quality measure. Hence, items 1 and 2 were removed in order to ensure that sufficient discriminant validity was attained, without altering the content validity of the scale. The revised three item measure of implementation success achieves a Cronbach alpha of 0.95, which again whilst very high, indicates that there is scope to shorten the scale—although this is beyond the scope of the present study. Table 6.4.2.3 shows the EFA results for the revised three item measure of implementation success.

Table 6.4.2.3 EFA Results for Implementation Success (Revised Three Item Measure)

Item	Factor Loading
1. Considered a success in the company	0.950
2. Considered a success by decision-makers	0.946
3. Considered a success in respondent's area of the company	0.954

Bartlett's test of sphericity is significant (0.000), and the KMO score of 0.773 is considered to be more than acceptable (Kaiser, 1974). 90% of the variance is explained by the single factor, and a visual inspection of the scree plot also supports a single factor solution. Therefore, the three item measure of implementation success was retained and used in the subsequent analysis.

Commitment was measured using Olson et al. (2007a) and Wooldridge and Floyd's (1990) 6 item scale, demonstrating a high level of internal consistency, with a Cronbach alpha of 0.80. The EFA results for implementation success are shown in table 6.4.2.4.

Table 6.4.2.4 EFA Results for Commitment (Original Six Item Measure)

Item	Factor 1 Loadings	Factor 2 Loadings
1. Willingness to properly implement		0.886
2. Working hard and enthusiastically		0.855
3. Belief would improve company performance	0.714	
4. Consistent with personal priorities and interests	0.832	
5. Satisfaction with alternative chosen	0.851	
6. Best alternative	0.692	0.356

The existence of two factors was unexpected and not consistent with the theoretical structure of the measure. However, the CFA (section 6.5) showed that commitment failed to achieve sufficient discriminant validity with respect to both the original five and revised three item implementation success measures. Hence, items 1, 2, and 4 were removed in order to achieve sufficient discriminant validity without altering the content validity of the scale. The revised three item measure of commitment demonstrates a high level of internal consistency—with a Cronbach alpha of 0.77, and table 6.4.2.5 shows the results of the EFA for the revised three item measure.

Table 6.4.2.5 EFA Results for Commitment (Revised Three Item Measure)

Item	Factor Loadings
1. Belief would improve company performance	0.759
2. Satisfaction with alternative chosen	0.888
3. Best alternative	0.846

Bartlett's test of sphericity is significant (0.000), and the KMO score of 0.655 is acceptable (Kaiser, 1974). 69% of the variance is explained by the single factor, and a visual inspection of the scree plot also supports a single factor solution. Therefore, the three item measure of commitment was retained and used in the subsequent analysis.

SD speed was measured using Clark and Maggitti's (2012) three item scale, and achieved a very good level of internal consistency—a Cronbach alpha of 0.81. EFA results for SD speed are shown in table 6.4.2.6.

Table 6.4.2.6 EFA Results for Strategic Decision Speed

Item	Factor Loadings
1. Took too long relative to rivals	0.764
2. Quick given the environment	0.883
3. Quick decision	0.892

Bartlett's test of sphericity is significant (0.000), and the KMO score of 0.67 is considered to be acceptable (Kaiser, 1974). 72% of the variance is explained by the single factor, and a visual inspection of the scree plot also supports a single factor solution.

To provide a test of convergent construct validity, an absolute measure of SD speed was also obtained, which asked respondents to state the number of months taken from the first deliberate

consideration of the decision to when a commitment to act was made. Consistent with prior studies (e.g. Judge and Miller, 1991), the scale was reversed because duration actually measures the slowness of a decision. The correlation between the two measures of SD speed is 0.484, which is significant at the 0.01 level. This indicates a high level of convergent validity at the construct level.

6.4.3 Exploratory Factor Analysis and Internal Consistency: TMT Characteristics

The development and testing of TMT expertise is dealt with separately in chapter 7. Also, TMT power decentralisation—because it is a single item measure, was not subject to EFA and assessment of its internal consistency. However, TMT cognitive diversity, using Miller et al's (1998) four item scale was suited to EFA and an assessment of its internal consistency. Its Cronbach alpha of 0.92 is considered to very good, and consideration should be paid to shortening it (DeVellis, 2003). However, shortening the scale is beyond the scope of the present study, and because the scale only consists of four items, deletion of one or more items may affect its content validity. EFA results for cognitive diversity are shown in table 6.4.3.

Table 6.4.3 EFA Results for Top Management Team Cognitive Diversity

Item	Factor Loadings
1. Long term profitability	0.899
2. Goal priorities	0.893
3. Long term survival	0.911
4. Most important objectives	0.891

Bartlett's test of sphericity is significant (0.000), and the KMO score of 0.822 is considered to be more than acceptable (Kaiser, 1974). 81% of the variance is explained by the single factor, and a visual inspection of the scree plot also supports a single factor solution.

6.4.4 Exploratory Factor Analysis and Internal Consistency: SD Specific Characteristics

The four SD specific characteristics; SD familiarity, time pressure, uncertainty, and magnitude of impact were assessed for their internal consistency, and EFA was performed on each of the four characteristics.

SD familiarity was measured using a three item scale adapted from Dean and Sharfman (1993a) and Papadakis et al. (1998), and achieved a Cronbach alpha of 0.77—which is considered to be respectable (DeVellis, 2003).

Table 6.4.4.1 EFA Results for Strategic Decision Familiarity

Item	Factor Loadings
1. Frequency of occurrence	0.760
2. Familiarity with type of decision	0.881
3. Similarity to decisions dealt with in the past	0.842

Bartlett's test of sphericity is significant (0.000), and the KMO score of 0.659 is considered to be more than adequate (Kaiser, 1974). 69% of the variance is explained by the single factor, and a visual inspection of the scree plot also supports a single factor solution.

Time pressure was measured using a two item scale adapted from Papadakis et al. (1998), and achieved a Cronbach alpha of 0.82, which is considered to be very good (DeVellis, 2003). The results of which are reported in this section. EFA results for SD time pressure are shown in table 6.4.4.2.

Table 6.4.4.2 EFA Results for Strategic Decision Time Pressure

Item	Factor Loadings
1. Strict time pressure on decision-makers	0.922
2. Pressure to take an immediate decision	0.922

Bartlett's test of sphericity is significant (0.000), and the KMO score of 0.5 is considered to be acceptable (Kaiser, 1974). 85% of the variance is explained by the single factor, and a visual inspection of the scree plot also supports a single factor solution.

SD uncertainty was measured using Papadakis et al's (1998) three item scale, and achieved a Cronbach alpha of 0.66, which whilst low compared to the Cronbach alphas attained by the other measures used in the present study, it is still above the acceptable threshold (DeVellis, 2003), albeit it is below the 0.7 threshold recommended by Nunnally (1978). Furthermore, the 0.66 Cronbach alpha attained in the present study represents an improvement on the 0.56 attained by Papadakis et al. (1998), although it is lower than the 0.74 attained by Elbanna and Child (2007b). Whilst deleting item 1 would have improved the Cronbach alpha to 0.76, because the full scale's alpha of 0.66 is above the acceptable threshold (DeVellis, 2003), it was decided to retain all three items. EFA results for SD uncertainty are shown in table 6.4.4.3.

Table 6.4.4.3 EFA Results for Strategic Decision Uncertainty

Item	Factor Loadings
1. Difficulty predicting outcomes	0.620
2. Uncertain about actions to take	0.842
3. Not clear what information required	0.862

Bartlett's test of sphericity is significant (0.000), and the KMO score of 0.59 is considered to be acceptable (Kaiser, 1974). 61% of the variance is explained by the single factor, and a visual inspection of the scree plot also supports a single factor solution.

Finally, SD magnitude of impact, using Papadakis et al's (1998) 8 item measure, achieved a Cronbach alpha of 0.7, which is considered to be respectable (DeVellis, 2003). EFA results for SD magnitude of impact are shown in table 6.4.4.4.

Table 6.4.4.4 EFA Results for Strategic Decision Magnitude of Impact

Item	Factor 1 Loadings	Factor 2 Loadings	Factor 3 Loadings
1. Impact on profit	0.263	0.097	0.545
2. Impact on product/service quality	0.766	-0.079	0.279
3. Impact on delivery of products/services	0.710	-0.052	0.476
4. Impact on costs	-0.113	0.094	0.839
5. Impact on sales and marketing	0.630	0.458	-0.142
6. Impact on market share	0.651	0.313	-0.179
7. The need to change existing programmes of activity	0.093	0.884	0.035
8. Overall adjustment to the company required	0.066	0.812	0.207

The three factor solution obtained was unexpected, given that a single factor structure was derived by Papadakis et al (1998). Therefore, the EFA was re-performed, specifying a priori on theoretical grounds (Mooi and Sarstedt, 2011), that a single factor solution should be obtained. The results of this EFA are shown in table 6.4.4.5.

Table 6.4.4.5 Revised EFA Results for Strategic Decision Magnitude of Impact

Item	Factor 1 Loadings
1. Impact on profit	0.435
2. Impact on product/service quality	0.626
3. Impact on delivery of products/services	0.665
4. Impact on costs	0.248
5. Impact on sales and marketing	0.686
6. Impact on market share	0.608
7. The need to change existing programmes of activity	0.583
8. Overall adjustment to the company required	0.579

Bartlett's test of sphericity is significant (0.000), and the KMO score of 0.629 is considered to be more than acceptable (Kaiser, 1974). However, a relatively low amount of variance, 33%, is explained by the single factor. A visual inspection of the scree plot supports a single factor solution, and there are strong theoretical grounds to specify a single factor solution. Item number 4 is below the recommended threshold of 0.3 (Spector, 1992). However, previous studies in the SDMP domain of literature have reported factor loadings of below 0.3 (e.g. Papadakis et al. 1998), and because deleting item 4 would reduce the content validity of the measure, it was decided to retain it. Furthermore, the 8 item measure attains an acceptable degree of internal consistency (DeVellis, 2003; Nunnally, 1978).

6.4.5 Exploratory Factor Analysis and Internal Consistency: External Environment

Two external environmental dimensions were operationalised in the present study; environmental dynamism, and environmental hostility-munificence. This section discusses the results of the EFA and tests of internal consistency performed on these two constructs.

Environmental dynamism was measured with a widely used 6 item scale (Green et al. 2008; Miller and Friesen, 1983; Mitchell et al. 2011). The scale attained a Cronbach alpha of 0.80, which is considered to be very good (DeVellis, 2003). The results of this EFA for environmental dynamism are shown in table 6.4.5.1.

Table 6.4.5.1 EFA Results for Environmental Dynamism

Item	Factor 1 Loadings
1. Change marketing practices	0.481
2. Rate of product/service obsolescence	0.538
3. Predictability of competitors	0.732
4. Stability of competition	0.477
5. Ability to forecast demand	0.862
6. Ability to forecast customer preferences	0.826

Bartlett's test of sphericity is significant (0.000), and the KMO score of 0.742 is considered to be more than acceptable (Kaiser, 1974). 45% of the variance is explained by the single factor, and a visual inspection of the scree plot also supports a single factor solution.

Environmental hostility-munificence was measured using Khandwalla's (1977) three item scale, and achieved a Cronbach alpha of 0.78, which is considered to be respectable (DeVellis, 2003). The results of this EFA for environmental hostility-munificence are shown in table 6.4.5.2.

Table 6.4.5.2 EFA Results for Environmental Hostility-Munificence

Item	Factor 1 Loadings
1. Threat to survival	0.876
2. Stressfulness	0.871
3. Dominating environment	0.757

Bartlett's test of sphericity is significant (0.000), and the KMO score of 0.67 is considered to be more than acceptable (Kaiser, 1974). 70% of the variance is explained by the single factor, and a visual inspection of the scree plot also supports a single factor solution.

6.4.6 Summary of EFA and Assessment of Internal Consistency

EFA and an assessment of internal consistency were performed on all multi-item scales, producing satisfactory results throughout. The internal consistencies were assessed using Cronbach's alpha, and all were above the minimally acceptable threshold of 0.65 recommended by DeVellis (2003), and all with the exception of one (SD uncertainty—Cronbach alpha of 0.66) were above the threshold of 0.7 recommended by Nunnally (1978). The Cronbach alphas of the multi-item measures used in the present study are summarised in table 6.4.6.

Table 6.4.6 Summary of Results for Tests of Internal Consistency

Measure	**Cronbach Alpha**
SDMP Characteristics	
Procedural rationality	0.81
Comprehensiveness	0.91
Behavioural Integration	0.91
Intuition	0.86
Political Behaviour	0.74
SDMP Outcomes	
SD Quality	0.93
Implementation Success (revised 3 item measure)	0.95
Commitment (revised 3 item measure)	0.77
Speed (relative measure)	0.81
TMT Characteristics	
TMT Cognitive Diversity	0.92
SD Specific Characteristics	
SD Familiarity	0.77
Time Pressure	0.82
SD Uncertainty	0.66
Magnitude of Impact	0.70
The External Environment	
Environmental Dynamism	0.80
Environmental Hostility-Munificence	0.78

EFA was performed on all multi-item measures, using PCA (Varimax with orthogonal rotation). Applying Bartlett's test of sphericity, all measures were statistically significant, and the KMO values

were all above the acceptable threshold of 0.5. In all cases a single factor solution was obtained, and all factor loadings were above the recommended threshold of 0.3, with the exception of one item which had a factor loading of 0.248 (SD magnitude of impact, item 4). The variance explained in the constructs by the factor solutions obtained varied from 33% (SD magnitude of impact) to 90% (implementation success). Overall, the results of the EFA and tests of internal consistency provide a high level of confidence in the validity and reliability of the measures operationalised in the present study. However, further stringent tests were applied to the measures to provide even greater confidence. Tests for common method bias were conducted, the discriminant validity of the measures was assessed using Fornell and Larcker's (1981) procedures, and the inter-rater reliability of the SDMP characteristics and SDMP outcomes was also assessed. The results of these additional tests are detailed in sections 6.4.7 to 6.7.

6.4.7 Tests for Common Method Bias

Harman's one factor test (Podsakoff and Organ, 1986) was used to assess the presence of common method bias. Common method bias "refers to the shared variance among measured variables that arises when they are assessed using a common method" (Siemsen et al. 2010, p.456). Whilst attempts were made to mitigate the risk of common method bias (e.g. question ordering, a lengthy survey instrument, reverse scaled anchors, using different types of items), there is a risk that because a single source was used for multiple different measures, this may impose a bias on the data. However, a principal components factor analysis yielded 21 factors with eigenvalues of greater than 1, accounting for 76% of the variance. Several factors were therefore identified, rather than just one. Furthermore, the first factor did not account for an especially high proportion of the variance (only 21%), and hence, a significant amount of common method bias does not appear to be present.

Common method bias is also unlikely to be a key concern in the present study because in Siemsen et al's (2010) study of the effects of common method bias, the findings show that:

1. In multivariate linear relationships, common method bias decreases when additional independent variables are included in a regression equation, and;

2. Interaction effects are not artefacts of common method bias—rather, interaction effects are much more difficult to detect in the presence of common method bias because it can diminish the effects of interaction terms.

Hence, given the large number of independent variables included in the present study, common method bias is unlikely to affect the regression equations examining multivariate linear relationships. Furthermore, if common method bias is present—and Harman's single factor test suggests it is not—it will make the detection of significant interaction effects less likely. Thus, if interaction effects are detected, they cannot be attributed to common method bias.

6.5 Confirmatory Factor Analysis

Because structural equation modelling was not used in the present study, owing to sample size limitations, confirmatory factor analysis (CFA) was used principally to establish the discriminant validity of the measures, using the Fornell and Larcker (1981) procedure. Discriminant validity essentially means that "a latent variable is able to account for more variance in the observed variables associated with it than a) measurement error or similar external, unmeasured influences; or b) other constructs within the conceptual framework" (Farrell, 2010, p.234). Fornell and Larcker (1981) outline a procedure to establish discriminant validity between constructs which comprises:

1. Calculate the average variance extracted (AVE) for each construct;

2. Compare the AVE for each construct to its shared variance with other constructs;

3. If the AVE for each construct is greater than its shared variance with other constructs, discriminant validity is established.

The STATA IC 12 software was used to perform the tests of discriminant validity, using its structural equation modelling functionality. CFA is utilised so as to incorporate measurement error (Farrell, 2010), and the AVE is calculated by taking the average of the items' factor loading scores, for each construct. The shared variance is calculated by taking the square root of the correlation between two constructs.

Appendix 9 shows the AVE for each construct and its shared variance with other constructs. It was not possible to establish discriminant validity for two of the original constructs—implementation success, and commitment. The AVE of implementation success of 0.73 was marginally less than its shared variance with SD quality, which is 0.74. Hence, because items 1 and 2 of the implementation success measure had the lowest factor loadings in both the EFA and CFA, both were deleted. Furthermore, the deletion of these two items improved the internal consistency of the scale without affecting its content validity. Item 1 ('the decision was an example of effective implementation') was considered to be adequately captured by items 3, 4, and 5. Also, item 2 relates to implementation effort rather than implementation success, and hence it was considered appropriate to delete this item too. As a result of deleting items 1 and 2, the AVE of the measure improved to 0.85, which is well in excess of its shared variance with any other construct, including decision quality.

Similar problems were encountered with the commitment measure, and its AVE of 0.42 was lower than its shared variance with implementation success of 0.59. As a result, items 1, 2, and 4 were omitted because these had low factor loadings, and their deletion did not substantively change the content validity of the measure. As a consequence of the amendment, the AVE of the revised three item commitment measure of 0.56 was far greater than its shared variance with any other construct including the revised three item implementation success measure (0.36). Also, the Cronbach alpha of the revised three item commitment scale remained relatively high at 0.78.

The remaining items (3, 5, and 6) of the commitment scale all represent the extent to which the decision-makers believed the decision would positively influence company performance, and was the best out of all of the alternatives. Noble and Mokwa (1999) conceptualise three types of commitment—commitment to the organisation, commitment to the strategy, and commitment to the role. Hence the retained items (items 3, 5, and 6) are more closely related to Noble and Mokwa's (1999) concept of strategy commitment, whereas the three deleted items (1, 2, and 4) are more closely related to role or organisational commitment. For instance, two of the deleted items (1, 2) capture how much decision makers were willing to do to see that the decision was properly implemented and whether the decision inspired them to work hard and enthusiastically—which both intuitively appear to relate more to implementation (i.e. role commitment) rather than commitment to the actual decision. Item 4 captures whether the decision was consistent with the decision makers' personal beliefs and priorities—which relates more to the politicality of the process (and is similar to the political behaviour, item 1 variable) as opposed to the decision-makers intrinsic level of commitment to the SD that was made. Hence, it was decided that the remaining items (3, 5, and 6) parsimoniously represent the SD commitment construct, whilst also attaining sufficient convergent and discriminant validity.

It is also notable that procedural rationality and comprehensiveness established a high degree of discriminant validity; the AVE of procedural rationality (0.52) and of comprehensiveness (0.66) were both in excess of their shared variance (0.39). Together with the results of the EFA, these results suggest that procedural rationality and comprehensiveness are two unique and separate characteristics of the SDMP.

Finally, as shown in appendix 9 all but four measures have an AVE that exceeds the 0.5 threshold recommended by Bagozzi and Yi (1988), which indicates that more variance in the constructs is being caused by the items representing them than by measurement error. Measures with an AVE of below

0.5 include political behaviour (0.36), SD magnitude of impact (0.23), SD uncertainty (0.46), and environmental dynamism (0.37). However, as already detailed in this chapter—these measures have met other stringent tests of validity and reliability, and given that all of these measures are previously established, and published in international peer reviewed journals graded as 4 or 4* in the 2010 Association of Business Schools journal—it was decided to retain them for use in the regression analysis. Furthermore, measures with AVEs of below 0.5 are commonly used in the literature, provided they achieve sufficient discriminant validity (e.g. Cadogan et al. 2005). In the present study, all measures attain sufficient discriminant validity (Fornell and Larcker, 1981), and it was decided to retain these measures because of their importance in the present study and because no alternative measures existed. However, the results of the regression analysis must be treated with a degree of caution, and a limitation of the present study will be the AVE scores of these four measures.

6.6 Inter-Rater Reliability

Inter-rater reliability was assessed in a number of different ways, according to procedures commonly deployed in international peer reviewed journals graded as 4 or 4* in the 2010 Association of Business Schools journal (e.g. Jones et al. 1983; Simsek et al. 2005). Such procedures included:

1. T-tests and intraclass correlations (ICC) were assessed at the item level;

2. Mean differences and correlations were assessed at the scale level, and;

3. Items from both informants were combined and the internal consistency assessed (e.g. procedural rationality items from the main informant were combined with procedural rationality items from the second informant).

The item level T-tests revealed no statistically significant differences between the mean scores of the main and second informants across 44 different items.

The intraclass correlations (ICC), which assess the consistency between measures of the same thing (Field, 2013) were calculated at the item level. All items except one (behavioural integration, item 4—'the decision-makers usually let each know when their actions would affect another decision-makers' work') were found to be significantly correlated (many items were significantly correlated at the 0.000 level). As shown in appendix 10, correlations at the item level ranged from 0.183 to 0.692. The ICC of behavioural integration was examined further at the scale level (also shown in appendix 10), and there was a significant level of agreement between the two informants—the two scales are correlated at 0.282 ($p < .001$).

The mean differences were assessed at the scale level and are shown in table 6.6.1, and the largest difference identified was 0.23—relating to comprehensiveness. The mean average for the comprehensiveness score for main informants is 3.7 whereas the mean average for the comprehensiveness scores of second informants is 3.93, which can be considered a relatively small difference.

Table 6.6.1 Comparison of Mean Scores of Main and Second Informants

Construct	**Main Informant Score**	**Second Informant Score**
Procedural rationality	4.87	4.87
Comprehensiveness	3.70	3.93
Behavioural Integration	5.00	4.92
Intuition	4.40	4.34
Political Behaviour	2.45	2.48
SD Quality	5.59	5.68
Implementation Success	5.60	5.58
Commitment	5.96	5.88
SD Speed	5.34	5.12

Correlations between the main and second informant measures were also assessed, and all measures were significantly correlated at the 0.01 level, as shown in table 6.6.2.

Table 6.6.2 Correlations between Main and Second Informant Measures

Measure	Correlation Between Main and Second Informant
Procedural rationality	0.53**
Comprehensiveness	0.54**
Behavioural Integration	0.28**
Intuition	0.40**
Political Behaviour	0.44**
SD Quality	0.71**
Implementation Success	0.63**
Commitment	0.36**
SD Speed	0.66**

**$p < .01$

Finally, the items from both informants for each measure were combined, and the internal consistency of the measure assessed (e.g. the procedural rationality items from the main informant were pooled together with the procedural rationality items from the second informant). The results are shown in table 6.6.3.

Table 6.6.3 Main and Second Informant Combined Measures: Assessment of Internal Consistency

Measure	Cronbach Alpha
Procedural rationality	0.87
Comprehensiveness	0.91
Behavioural Integration	0.90
Intuition	0.87
Political Behaviour	0.81
SD Quality	0.93
Implementation Success	0.92
Commitment	0.78
SD Speed	0.83

Whilst the internal consistency of measures generally increases as the number of items increases (Field, 2013), the above statistics do indicate that the responses of the two informants were very closely related.

Overall, the interrater reliability tests outlined in section 6.6 provide robust evidence of a high level of agreement between the main and second informants concerning the SDMP characteristics and SDMP outcomes.

6.7 Validation of Informant Data

As previously discussed in chapter 5, in order to validate the data gathered from the main and second informant, they were both asked to rate on a 7 point Likert sale:

1. Their level of involvement in making the SD (1=very limited, 7=very extensive)

2. Their level of confidence in answering the questionnaire (1=not at all confident, 7=very confident)

The mean average and standard deviations for these measures are shown in table 6.7.

Table 6.7 Test of Informant Competency

Test	**Main Informant** (N = 169)	**Second Informant** (N = 117)
1. Involvement in making the SD	6.43 (0.769)	5.8 (1.077)
2. Confidence in answering the questionnaire	6.32 (0.719)	6.01 (0.93)

Therefore, the high mean average score for both main and second informant in respect of their involvement in the making of the SD and confidence in answering the questionnaire provides a high degree of assurance concerning their competence, and ultimately, the validity of their responses.

6.8 Descriptive Analysis of Individual Scales

Table 6.8.1 shows the mean average scores for the measures used in the present study, and the table also includes a comparison to the mean average scores for other SDMP studies utilising the same, or similar, measures.

Table 6.8.1 Mean Average Scores for Measures

Measure	Mean	Standard Deviation	Comparison to Mean Averages Obtained in Relevant Empirical Studies
SDMP Characteristics			
Procedural rationality	4.8	1.13	5.46 (Elbanna and Child, 2007a; 2007b) 4.66 (Dean and Sharfman, 1996)
Comprehensiveness	3.79	1.51	3.48 (Atuahene-Gima and Li, 2004) 4.2 (Miller et al. 1998)
Behavioural Integration	4.95	1.09	3.48 (Number of Likert Scale points not stated) (Carmeli and Schaubroeck, 2006) 3.66 (5 point Likert Scale) (Simsek et al. 2005)
Intuition	4.40	1.26	4.04 (Elbanna et al. 2012) 3.36 (Dayan and Elbanna, 2011) 4.97/5.5/4.64 (Khatri and Ng (2000)
Political Behaviour	2.47	1.0	2.43 (Elbanna and Child, 2007a) 2.87 (Dean and Sharfman, 1996)
SDMP Outcomes			
SD Quality	5.57	1.4	3.18 (4 point Likert Scale) (Olson et al. 2007a) 3.02 (4 point Likert Scale) (Amason, 1996) 5.84 (SD effectiveness) (Elbanna and Child, 2007a) 4.32 (SD effectiveness) (Dean and Sharfman, 1996)
Implementation Success	5.54	1.49	2.79 (5 point Likert scale) (Noble and Mokwa, 1999)
Commitment	5.97	0.93	5.68 (Olson et al. 2007a)
SD Speed (Relative measure)	5.27	1.32	3.622 (5 point Likert scale) (Clark and Maggitti, 2012)
TMT Characteristics			
TMT Expertise	5.43	1.07	5.36 (Pilot study)
TMT Cognitive Diversity	2.59	1.15	5 (Olson et al. 2007a) 3.23 (Miller et al. 1998)
TMT Power Decentralisation	2.82	0.77	2.21 (Cao et al. 2010)
SD Specific Characteristics			
SD Familiarity	4.56	1.34	2.97 (5 point Likert scale) (Papadakis et al. 1998)
SD Time Pressure	4.22	1.48	4.44 (Papadakis et al. 1998)
SD Uncertainty	2.75	1.12	2.32 (Elbanna and Child, 2007a; 2007b) 2.44 (Papadakis et al. 1998)
SD Magnitude of Impact	4.55	1.01	3.29 (5 point Likert scale) (Papadakis et al. 1998)
External Environment			
Environmental Dynamism	4.32	1.05	3.17 (Papadakis et al. 1998)
Environmental Hostility-Munificence	4.25	1.24	3.59 (Elbanna and Child, 2007a; 2007b) 2.94 (5 point Likert scale) (Papadakis et al. 1998)
Firm Characteristics			
External Control (100 point scale)	26.24	29.36	41.43 (Dean and Sharfman, 1993a)
Size (Log)	4.97	0.64	2.45 Elbanna and Child (2007a; 2007b) 2.76 (Papadakis et al. 1998) 5.6 (Dean and Sharfman, 1993a)

Measure	Mean	Standard Deviation	Comparison to Mean Averages Obtained in Relevant Empirical Studies
Performance (Log)	2.1329	0.17422	0.997 (Papadakis et al. 1998)
Slack Resources (Log)	2.75	0.23	3.74 (Combs and Ketchen, 1999)

Overall the SDMP characteristics mean scores are broadly consistent with prior studies. Behavioural integration is relatively high compared to Carmeli and Schaubroeck (2006) and Simsek et al. (2005); however neither of these two studies were at the decision level of analysis and focused instead on the organisation as the level of analysis which may have caused respondents to make a more conservative estimate of behavioural integration.

The attempts to reduce the mean average for SD Quality were successful only to an extent. Although the mean score for SD Quality (5.57) is lower than the pilot study achieved for SD effectiveness (6.05); compared to the SD effectiveness score of Dean and Sharfman (1996) which was 4.32, the SD quality score of the present study appears still relatively high. However, the SD quality of the present study is broadly comparable with Amason (1996) and Olson et al. (2007a) when taking into account that both of these studies utilised a four point Likert scale as opposed to the 7 point Likert scale utilised in the present study. The SD quality score of 5.57 is slightly lower than Elbanna and Child's (2007a) SD effectiveness score of 5.84. It is clear therefore that informants are much more inclined towards providing details of successful SDs than they are providing details concerning ineffective ones. This may be considered a limitation of the present study.

The implementation success measure is also relatively high compared to Noble and Mokwa's (1999) study—however there are considerable differences between their study and the present study. Noble and Mokwa (1999) studied marketing strategy implementation, and surveyed middle managers, using 5 point Likert scales. The high score for implementation success is also likely to be indicative of the large number of successful SDs in the current sample. Furthermore, the mean score for the measure

of SD speed is relatively similar to Clark and Maggitti (2012), albeit they utilised a 5 point Likert scale.

Whilst there are no existing measures with which to compare the mean score for TMT expertise (5.43), it is apparent that the pilot study (which used data from an entirely separate sample) achieved a very similar mean score (5.36). The TMT cognitive diversity mean score is also consistent with Miller et al. (1998), yet considerably lower than that of Olson et al (2007a). Whilst the cognitive diversity score in the present study is relatively low—reflecting either a high level of consensus amongst the TMTs in the sample or a reluctance to disclose such information—the score of 5 reported by Olson et al. (2007a) reflects an exceptionally high degree of dissensus amongst the TMTs in their sample.

The SD specific characteristics mean scores are broadly consistent with the few studies that have included such measures. However, the scores for both environmental dynamism and hostility-munificence are higher than both Elbanna and Child (2007a) and Papadakis et al. (1998). This could be explained by the economic situation in which the present study was carried out, with the UK economy being in recession and suffering from high levels of uncertainty at the time many of the SDs were made. Finally, the mean scores of the firm characteristics measures are also broadly comparable with prior studies, albeit the mean score for external control in the present study is relatively low compared to Dean and Sharfman (1993a). This could be attributable to the size of the firms in the sample—Dean and Sharfman's (1993a) sample includes organisations with up to 6,600 employees, whereas the present study focuses on organisations with between 50 and 500 employees. Thus, the organisations in Dean and Sharfman (1993a) may have been more susceptible to external influences such as parent companies, compared to the organisations featured in the present study.

Overall, the pattern of responses is broadly consistent with those in the extant SDMP (and related domains) of literature. Caution should be drawn to such comparisons, however, owing to differences in the scales utilised (the present study utilises mostly 7 point Likert scales, whereas many studies use 4 or 5 point Likert scales), the countries in which the surveys were conducted, and the unprecedented economic conditions in which the present study was undertaken.

6.9 Correlations

The correlation coefficients for the present study are presented in table 6.9. The table reveals a number of significantly correlated variables, although none are correlated above 0.9, and none of the predictor variables are correlated above 0.626, indicating that multicollinearity is unlikely to be a significant issue in the regression analysis (Field, 2013). The number of significantly correlated variables indicates that the data is well suited to multiple regression analysis. However, caution should be drawn to the fact that although two variables may be significantly correlated, the strength and nature of their relationship may be altered by the inclusion of additional variables in a multiple regression equation (Elbanna, 2010; Field, 2013).

Table 6.9 Correlations among Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1.Procedural rationality	1																					
2.Comprehensiveness	.626**	1																				
3. Behavioural Integration	.415**	.320**	1																			
4.Intuition	-.617**	-.469**	-.223**	1																		
5.Political Behaviour	-.156*	-.056	-.367**	.152*	1																	
6.SD Quality	.456**	.283**	.408**	-.252**	-.220**	1																
7. Implementation Success	.474**	.287**	.49**	-.266**	-.18*	.864**	1															
8.Commitment	.266**	.221**	.345**	-.138	-.058	.548**	.601**	1														
9.SD Speed	.014	-.045	.288**	.036	-.189*	.198*	.243**	.163*	1													
10.Expertise	.413**	.302**	.483**	-.250**	-.189*	.264**	.374**	.258**	.004	1												
11.Cogntive Diversity	-.312**	-.257**	-.436**	.105	.156*	-.306**	-.440**	-.498**	-.141	-.340**	1											
12.Power Decentralisation	.123	.130	.125	-.115	-.158*	.025	-.018	-.04	-0.143	.192*	.011	1										
13.Familiarity	.04	.02	.157*	-.084	-.179*	.081	.116	.134	-.018	.376**	-.085	.086	1									
14.Time Pressure	.188*	.114	.122	-.025	.078	.098	.169*	.101	.279**	.013	-.005	-.072	-.142	1								
15. Uncertainty	-.273**	-.102	-.278**	.309**	.169*	-.274**	-.30**	-.154*	-.206**	-.222**	.132	-.125	-.273**	.011	1							
16.Magnitude of Impact	.124	.086	.13	.116	.04	.254**	.330**	.193*	.246**	-.035	-.239**	.058	-.104	.270**	.067	1						
17.Dynamism	.05	.146	.165*	-.082	-.118	.071	.113	.021	.011	.098	-.002	.051	.041	.170*	-.023	.175*	1					
18.Hostility-Munificence	.103	.214**	-.005	-.067	.089	.011	.087	.03	.045	.016	-.051	-.086	-.033	.103	.034	0	.175*	1				
19.External Control	.001	.176*	-.073	.093	.237**	-.105	-.068	.041	-.054	-.035	-.068	.053	-.169*	.15	.047	.033	-.094	.178*	1			
20.Size	.036	.055	.059	-.154*	.036	-.027	-.06	.000	-.044	.032	-.05	.045	.107	-.064	-.143	-.009	-.154*	.085	.027	1		
21.Performance	.000	-.01	-.069	-.025	-.059	-.062	-.065	-.049	-.005	-.044	.036	-.137	.051	.011	-.05	-.084	-.10	-.14	-.036	.13	1	
22.Slack Resources	.137	.053	.003	.021	-.025	.153*	.127	.107	.032	-.042	.057	.024	-.043	-.008	.047	.126	.001	-.015	.072	-.026	-.015	1

***Correlation is significant at the 0.05 level**
****Correlation is significant at the 0.01 level**

Table 6.9 shows that the TMT variables are significantly correlated to the SDMP characteristics, and in particular, TMT expertise is significantly correlated to all of the five SDMP characteristics and all of the SDMP outcomes, with the exception of SD speed. Also, cognitive diversity appears to have a pervasive effect on both SDMP characteristics and SDMP outcomes. This lends support to the upper echelons or strategic choice perspective, and indicates that the TMT may have significant direct and indirect effects in the regression models in chapter 8.

Consistent with prior empirical SDMP studies (Elbanna and Child, 2007b; Papadakis et al. 1998), the SD specific characteristics also appear to be a significant influence on SDMP characteristics—particularly SD uncertainty, and SD familiarity. External environmental variables, and firm characteristics variables appear to be less significantly correlated with SDMP characteristics and outcomes, although some significant correlations are still evident. For example, environmental dynamism and environmental hostility-munificence respectively are significantly correlated to behavioural integration and comprehensiveness; external control is significantly correlated with comprehensiveness and political behaviour; size is significantly correlated with intuition, and finally; slack resources is significantly correlated with SD quality.

Overall, the correlations presented in table 6.9 indicate that the variables in the present study are suitable for regression analysis. Furthermore, the fact that several of the contextual variables are significantly correlated with the SDMP outcomes indicates that the contextual variables may moderate some of the effects of SDMP characteristics on SDMP outcomes (Prescott, 1986).

6.10 Summary of Descriptive Analysis

This chapter has described the data obtained during the main data collection, in terms of the positions of the informants, the industry sectors represented in the sample, the size and age of the organisations, the types of SDs featured in the sample, and the number of participants in the SDs. This chapter has also described the rigorous statistical analysis which was undertaken in order to evaluate the reliability and validity of the existing measures utilised in the present study. These statistical tests included assessments of internal consistency, exploratory factor analysis, confirmatory factor analysis, tests of inter-rater reliability, validation of informant data, and tests for common method bias. These tests were performed using IBM SPSS Statistics 20 and STATA IC 12 software packages.

From the procedures undertaken all item and factor structures provided statistically acceptable values. However, amendments were made to the implementation success and commitment measures so as to ensure sufficient discriminant validity was attained (Farrell, 2010).

This chapter has also presented the mean averages of the measures used, and compared these to prior studies, and provided an overview of the significant correlations between the measures. Several significant correlations are evident, which indicate the appropriateness of further statistical analysis utilising multiple regression analysis.

The following chapter presents the measure development procedure for the TMT expertise scale, and subsequently, chapter 8 details the results of the multiple regression analysis. Finally, chapter 9 provides the findings and a discussion of the conclusions arising from the present study. Chapter 9 also states the substantial and original contribution to SDMP knowledge that this thesis makes.

CHAPTER 7 – THE DEVELOPMENT OF THE TMT EXPERTISE MEASURE

7.1 Introduction

This chapter describes the measure development process utilised for the newly created TMT expertise summated rating scale, with respect to assessing its validity and reliability.

TMT expertise is the extent to which the TMT has extensive knowledge concerning the SDMP, derived from:

(i) Deliberate practice, where TMT members have been involved in making challenging SDs which have stretched them beyond their existing levels of competence;

(ii) Having received exact and precise feedback on SDs that they have made, and;

(iii) Extensive experience of making SDs.

(Ericsson et al. 2007).

As discussed in chapter 5, the measure development process is comprised of the following major steps:

(i) Specify the domain of the construct;

(ii) Generate a pool of items;

(iii) Have the pool reviewed by experts;

(iv) Collect data, and;

(v) Assess the validity of the measure.

(DeVellis, 2003 and Spector, 1992)

Having already addressed step (i) in chapter 3, steps (ii) and (iii) in chapter 4; the current chapter provides a discussion of steps (iv) and (v). Hence this chapter is primarily concerned with describing the assessment of the validity and reliability of the TMT expertise measure utilising both the pilot study data, and data gathered during the main data collection. A similar process was followed to that detailed in chapter 6, which described the process by which the previously established measurement scales were examined. Using both the pilot study and main data, the items of the newly developed scale were assessed, and subsequently the validity and reliability of the TMT expertise measure was evaluated by (i) assessing its internal consistency using Cronbach's alpha (Cronbach, 1951); (ii) conducting an exploratory factor analysis; (iii) assessing discriminant validity by using CFA, and; (iv) examining the construct validity (nomological validity) by looking at correlations between TMT expertise and other measures that it should theoretically be related to.

It should be noted that a degree of confidence concerning the face validity (or content validity) of the items is provided from the fact that the items were derived from extant theory (e.g. Dayan and Elbanna, 2011) or from the exploratory phase of qualitative research where semi-structured interviews were conducted with 30 TMT members. Further confidence concerning the face validity of the measure can be gained from the review of the items which was conducted by 4 senior academics, and two senior TMT members. However, it was not possible to determine the predictive or criterion validity of the measure owing to the absence of suitable external criterion variables, although section 7.5 provides some evidence concerning the nomological validity of the measure. This may be considered a limitation of the present study.

The remainder of this chapter is structured as follows: section 7.2 details the assessment of the internal consistency of the measure; section 7.3 presents the results of exploratory factor analysis; section 7.4 details the results of the test of discriminant validity, and section 7.5 provides a discussion concerning the nomological validity of the scale. A chapter summary is presented in section 7.6.

7.2 Assessment of Internal Consistency

The TMT expertise items included in the pilot study, and subsequently the main data collection questionnaire, are detailed in table 7.2.1. Respondents were asked to answer all items using a 7 point Likert scale (1=very strongly disagree, 7=very strongly agree).

Table 7.2.1 TMT Expertise Items

Item Number	Item Wording
1	The decision-makers bought with them a wealth of information gained from prior assignments within this company
2	The decision-makers have all had extensive feedback on previous strategic decisions that they have been involved in
3	The decision-makers all have extensive experience of being involved in making challenging strategic decisions
4	The decision-makers have a high level of expertise in making strategic decisions
5	The decision-makers have a track record of making effective strategic decisions
6	The decision-makers have learnt a lot from previous strategic decisions that they have been involved in

Consistent with the theoretical underpinning of the construct (as detailed in chapter 3)—item 1 (from Dayan and Di Benedetto, 2011 and Dayan and Elbanna, 2011) captures the extensiveness of the TMTs prior experience; item 3 represents deliberate practice; items 2 and 6 capture the extent to which the TMT have had feedback on prior SDs; item 5 is included because expertise manifests itself in superior performance (Ericsson, 2006), and finally; item 4 captures the construct in its entirety.

Having developed an initial pool of items, which was reviewed and purified by a panel of senior academics and TMT members (per chapter 5); the items were administered to two separate samples during the pilot study and main data collection. Having collected data from 71 informants in the pilot study, and 169 during the main data collection, the next stage of the measure development process is to evaluate the performance of the items (DeVellis, 2003; Spector, 1992).

One of the most important indicators of a scale's quality is its Cronbach alpha, which provides an indication of its reliability (DeVellis, 2003). Having already provided an explanation of Cronbach's alpha and internal consistency in chapter 6, together with the guidelines for acceptable Cronbach alphas, table 7.2.2 shows the Cronbach alphas achieved for the TMT expertise measure from both the pilot study and main data collection. The table also shows the implications for the scale's Cronbach alpha of deleting an item.

Table 7.2.2 Test for Internal Consistency: TMT Expertise Measure

Item	**Alpha if Item Deleted** Pilot Study (N=71)	**Alpha if Item Deleted (**Main Data Collection) (N=169)
1. The decision-makers bought with them a wealth of information gained from prior assignments within this company	0.769	0.882
2. The decision-makers have all had extensive feedback on previous strategic decisions that they have been involved in	0.752	0.893
3. The decision-makers all have extensive experience of being involved in making challenging strategic decisions	0.716	0.856
4. The decision-makers have a high level of expertise in making strategic decisions	0.719	0.845
5. The decision-makers have a track record of making effective strategic decisions	0.727	0.861
6. The decision-makers have learnt a lot from previous strategic decisions that they have been involved in	0.720	0.852
Cronbach Alpha for Scale	**0.767**	**0.885**

As is evident in table 7.2.2, in the pilot study, the Cronbach alpha achieved was 0.767, which is considered to be respectable (DeVellis, 2003) and in the main data collection the alpha of 0.885 is considered to be very good (DeVellis, 2003). In both the pilot study and main data collection the items were scrutinised to determine if the scale's Cronbach alpha could be improved by the deletion of any items. As is evident, in both the pilot and main study, there are no candidates for deletion. In the pilot study, deleting item 1 would have improved the alpha marginally (from 0.767 to 0.769), and in the main data, deleting item 2 would have fractionally improved the alpha from 0.885 to 0.893.

However, neither item was deleted because the omission of these items would diminish the content validity of the scale. Because of the respectable Cronbach alpha (DeVellis, 2003) and results of the EFA (see section 7.3) achieved using the pilot sample; it was decided to retain all six of the measure's items for use in the main data collection instrument.

7.3 Exploratory Factor Analysis

As detailed in chapter 6, exploratory factor analysis was utilised to assess the reliability and validity of the TMT expertise measure. Sample size was not an issue, even for the pilot data, because commonly accepted rules of thumb (Mooi and Sarstedt, 2011; Nunnally, 1978) specify at most a ratio of 10 cases per item. Therefore sample sizes of 71 and 169 comfortably exceed the minimum requirement of 60 cases.

Consistent with the techniques utilised to examine the existing measures used in the study, Bartlett's test of sphericity was used to examine the presence of correlations amongst the scales' variables, and the Kaiser Mayer-Olkin (KMO) was utilised as a measure of sampling adequacy. Principal component analysis (using Varimax orthogonal rotation) was the EFA technique employed. The factor loadings of the items were also assessed, and these are presented in table 7.3.1.

Table 7.3.1 EFA: Pilot Study and Main Data Results

	Pilot Study Factor Loading Scores (N=71)	**Main Data Factor Loading Scores (N=169)**
1. The decision-makers bought with them a wealth of information gained from prior assignments within this company	0.501	0.695
2. The decision-makers have all had extensive feedback on previous strategic decisions that they have been involved in	0.544	0.663
3. The decision-makers all have extensive experience of being involved in making challenging strategic decisions	0.776	0.862
4. The decision-makers have a high level of expertise in making strategic decisions	0.83	0.906
5. The decision-makers have a track record of making effective strategic decisions	0.792	0.842
6. The decision-makers have learnt a lot from previous strategic decisions that they have been involved in	0.774	0.863

Using the pilot study data, all items loaded onto one single factor at a value of 0.5 or higher, which is considerably higher than the minimum threshold of 0.3 advocated by Spector (1992). Furthermore, Bartlett's test of sphericity was significant (0.000), and the KMO score of 0.746 is considered to be 'middling' (Kaiser, 1974)—which is more than adequate. Also, 51% of the variance is explained, and a visual inspection of the scree plot strongly supported a single factor solution. Hence, on the basis of the test of internal consistency and EFA results, it was decided to include the 6 item measure of TMT expertise in the final data collection instrument.

As is evident in table 7.3.1, the items from the data gathered during the main data collection all load onto one single factor, with the minimum factor loading score of 0.663 considerably higher than the threshold of 0.3 recommended by Spector (1992). Furthermore, Bartlett's test of sphericity was significant (0.000), and the KMO score of 0.877 is considered to be 'meritorious' (Spector, 1992). 66% of the variance is explained, and the scree plot strongly supports a single factor solution.

The TMT expertise items all converge significantly on a single factor, and hence, the results of the EFA performed on both the pilot and main data provide evidence of the unidimensionality of the scale, and its convergent validity (Bagozzi, 1994).

7.4 Discriminant Validity

Discriminant validity assesses whether measures that are theoretically unrelated, are in fact unrelated (Farrell, 2010). Consistent with the approach adopted in chapter 6, discriminant validity for the TMT expertise measure was established (using the main data) by comparing its average variance extracted (AVE) to its shared variance with the other measures of the study (Fornell and Larcker, 1981). To prove the discriminant validity of the TMT expertise measure, its AVE must exceed its shared variance with any of the other measures. Therefore in order to establish the discriminant validity of the TMT measure, the following procedure was utilised:

1. The TMT expertise AVE was calculated as 0.63, meaning that a significant proportion of variance in the construct is being caused by its items, as opposed to measurement error.

2. The shared variance between TMT expertise and the other measures was calculated. The highest shared variance was with the SDMP characteristic behavioural integration (0.23).

Therefore, because the TMT expertise AVE of 0.63 exceeds the shared variance with behavioural integration, it is possible to conclude that the measure achieves sufficient discriminant validity (Farrell, 2010).

7.5 Nomological Validity

Nomological validity (also referred to as construct validity) is concerned with the specification of theoretical relationships between the latent construct and other constructs (e.g. antecedents or outcomes) which may be related to it (Lee and Lings, 2008). Hence, nomological validity assesses how well the construct predicts others in the model (Hair et al. 2008).

In the present study, there are two constructs which TMT expertise should theoretically be significantly related to: SD familiarity and SD quality. Expert TMTs have significant experience of making many different types of SDs than compared to novice decision-makers. Hence TMT expertise should be significantly and positively correlated with SD familiarity. Because the performance of expert decision-makers is superior to that of novice decision-makers (Ericsson, 2006); TMT expertise should also be significantly and positively related to SD quality. As is evident in table 7.5, TMT expertise meets the test of nomological validity because it is significantly and positively correlated with both SD familiarity and SD quality at the 0.01 level.

Table 7.5 Nomological Validity of TMT Expertise Measure

	Strategic Decision Familiarity	**Strategic Decision Quality**
TMT Expertise	0.376**	0.264**

**Significant at the 0.01 level

7.6 Summary of Measure Development

This chapter has examined the newly developed TMT expertise summated rating scale, and rigorously assessed its validity and reliability using empirical data from both the pilot study and main data collection. The assessment of internal consistency produced Cronbach alphas higher than the minimum threshold (DeVellis, 2003), and the results of the EFA and CFA also exceeded the

published statistical thresholds. Finally, the nomological validity of the measure was demonstrated through its correlations with two other theoretically related constructs—SD familiarity and SD quality. Overall the TMT expertise measure demonstrates more than acceptable levels of validity and reliability, and is considered appropriate for inclusion in the hypotheses testing using multiple regression analysis.

The next chapter (chapter 8) presents the results of the multiple regression analysis which is utilised to test the hypotheses. This thesis ends with chapter 9, which provides a general discussion of the findings and conclusions of the present study, and states the substantial and original contribution to knowledge that this thesis makes.

CHAPTER 8 – RESULTS AND HYPOTHESES TESTING

8.1 Introduction

Having explained the methodology, described the data, and discussed the development of the TMT expertise measure in chapters 5, 6, and 7; this chapter presents the results of the hypotheses testing.

To test the present study's hypotheses, the data pertaining to the main informant's questionnaire is used. The main informant questionnaire was utilised so as to maximise the sample size and subsequent generalisability of the findings. This is because second informant questionnaires were only obtained for 117 of the main informant questionnaires. Hence utilising the main informant questionnaires permitted the use of a larger sample, and the second informant questionnaires were therefore utilised as a means of assessing inter-rater reliability (see chapter 6, section 6.6).

This chapter comprises several sub-sections. In section 8.2.1 the first group of hypotheses are tested concerning the influence of contextual variables, from multiple theoretical perspectives, on SDMP characteristics. In section 8.2.2 the second group of hypotheses are tested regarding the effects of SDMP characteristics on SDMP outcomes, and finally; in section 8.2.3 the third group of hypotheses are tested concerning the moderating effects of contextual variables on the relationships between SDMP characteristics and SDMP outcomes. In section 8.3 the regression models are assessed, in terms of diagnosing outliers and influential cases (section 8.3.1), and assessing how well they generalise beyond the sample (section 8.3.2). Also, the regression models were assessed for their robustness, and section 8.4 presents the results of these post-hoc procedures. Finally, section 8.5 summarises this chapter.

8.2 Hypotheses Testing

This section of chapter 8 presents the results of the hypotheses testing, commencing with the results of the first group of hypotheses, concerning the multi-theoretic influences on SDMP characteristics. Section 8.2.2 then presents results from the second group of hypotheses, concerning the effects of SDMP characteristics on SDMP outcomes. Finally, section 8.2.3 presents the results of the tests of hypotheses concerning the moderating effects of contextual variables on the relationships between SDMP characteristics and SDMP outcomes.

8.2.1 The First Group of Hypotheses: Multi-Theoretic Influences on SDMP Characteristics

Hypotheses 1-4 examine the relative influence of each of the four theoretical perspectives (or categories of contextual variable i.e. TMT, SD specific characteristics, the external environment, and firm characteristics) on each of five SDMP characteristics (procedural rationality, comprehensiveness, behavioural integration, intuition, and political behaviour). The present study follows the approach of Hitt and Tyler (1991), Elbanna and Child (2007b), Elbanna (2010), and Papadakis and Barwise (2002), and uses hierarchical regression analysis to test the amount of variance in each SDMP characteristic which is explained by each theoretical perspective above and beyond the variance explained by the other theoretical perspectives. Tables 8.2.1.1 to 8.2.1.4 show the results of the hierarchical regression models for testing the first four hypotheses.

Hypothesis 1 states that: **TMT variables will account for a significant amount of variance in SDMP characteristics, above and beyond the variance attributable to SD specific characteristics, the external environment, and firm characteristics**. To test this hypothesis, two regression equations[1] (ordinary least squares) were computed for each of the five dependent variables (procedural rationality, comprehensiveness, behavioural integration, intuition, and political

[1] $y_i = \beta_0 + \beta_1 x_{1i} + \beta_2 x_{2i} + \ldots + \beta_p x_{pi} + e_i$

behaviour). First, the variables pertaining to SD specific characteristics, the external environment, and firm characteristics were entered into the regression equation (restricted model, table 8.2.1.1[2]). Second, the TMT variables were added to the equation (full model, table 8.2.1.1). This procedure was performed for each of the five SDMP characteristics, and enabled the assessment of the unique variance in the dependent variable attributable to the TMT variables. As is evident in table 8.2.1.1, TMT variables added 17.9% (i.e. the ΔR^2) of the explained variance in procedural rationality ($p \leq 0.01$), 10.9% in comprehensiveness ($p \leq 0.01$), 24.3% in behavioural integration ($p \leq 0.01$), 4.4% in intuition ($p \leq 0.05$), and 5.5% in political behaviour ($p \leq 0.05$). Therefore, TMT variables explain a significant amount of variance in each of the SDMP characteristics above and beyond that explained by the other contextual variables. On this basis, hypothesis 1 is supported.

[2] The tables in chapter 8 present the standardised betas from the regression output (Mooi and Sarstedt, 2011; Pallant, 2010).

Table 8.2.1.1 Hierarchical Regression Results: The Top Management Team as a Predictor of SDMP Characteristics (Adapted from Elbanna, 2010)

Variables	Procedural Rationality Model 1		Comprehensiveness Model 2		Behavioural Integration Model 3		Intuition Model 4		Political Behaviour Model 5	
	Restricted Model	Full Model	Restricted Model	Full Model	Restricted Model	Full Model	Restricted Model	Full Model	Restricted Model	Full Model
SD Specific Characteristics										
Familiarity	-0.006	-0.15*	0.027	-0.079	0.102	-0.045	0.031	0.103	-0.105	-0.064
Time Pressure	0.169*	0.168*	0.045	0.052	0.104	0.112	-0.058	-0.059	0.045	0.022
Uncertainty	-0.288**	-0.213**	-0.106	-0.043	-0.255**	-0.168*	0.291**	0.252**	0.137	0.091
Magnitude of Impact	0.084	0.035	0.055	0.007	0.104	0.019	0.129	0.147	0.022	0.081
External Environment										
Environmental Dynamism	-0.02	-0.042	0.118	0.101	0.113	0.100	-0.086	-0.071	-0.104	-0.097
Environmental Hostility-Munificence	0.108	0.107	0.166*	0.17*	-0.026	-0.037	-0.061	-0.068	0.044	0.033
Firm Characteristics										
External Control	-0.046	-0.078	0.156	0.126	-0.051	-0.090	0.094	0.111	0.189*	0.220**
Size	0.023	0.019	0.039	0.033	0.013	0.010	-0.128	-0.123	0.103	0.113
Past Performance	0.002	0.038	0.025	0.058	-0.074	-0.041	0.004	-0.028	-0.052	-0.081
Slack Resources	0.146	0.168*	0.045	0.063	0.009	0.044	-0.016	-0.024	-0.052	-0.066
Top Management Team										
TMT Expertise		0.355**		0.244**		0.336**		-0.178*		-0.047
Cognitive Diversity		-0.177*		-0.161*		-0.307**		0.057		0.171*
Power Decentralisation		0.069		0.097		0.043		-0.077		-0.157*
R^2	0.152	0.332	0.106	0.215	0.141	0.384	0.142	0.186	0.121	0.175
Adjusted R^2	0.098	0.275	0.049	0.149	0.087	0.332	0.088	0.118	0.065	0.106
F	2.834**	5.913**	1.865	3.261**	2.599**	7.435**	2.622**	2.732**	2.170*	2.535**
ΔR^2 from restricted models		**0.179**		**0.109**		**0.243**		**0.044**		**0.055**
ΔF		13.866**		7.184**		20.369**		2.798*		3.418*

*Significant at 0.05 level
**Significant at 0.01 level

Hypothesis 2 states that: **SD specific characteristics will account for a significant amount of variance in SDMP characteristics, above and beyond the variance attributable to the TMT, the external environment, and firm characteristics.** The same procedures were used as for hypothesis 1; first each SDMP characteristic was regressed onto contextual variables pertaining to the TMT, external environment and firm characteristics (restricted models, table 8.2.1.2). Second the SD specific characteristics were entered into the equation (full models, table 8.2.1.2). It is evident that SD specific characteristics explain a significant amount of variance in procedural rationality (ΔR^2 = 0.085, $p \leq 0.01$), behavioural integration ($\Delta R^2 = 0.039$, $p \leq 0.05$), and intuition ($\Delta R^2 = 0.081$, $p \leq 0.01$) above and beyond the variance explained by the TMT, external environment, and firm characteristics. However, SD specific characteristics do not explain a significant amount of variance in comprehensiveness ($\Delta R^2 = 0.009$) or political behaviour ($\Delta R^2 = 0.022$), above and beyond that explained by the variables associated with the other three theoretical perspectives (the TMT, external environment, and firm characteristics). Therefore, hypothesis 2 is only partially supported.

Table 8.2.1.2 Hierarchical Regression Results: SD Specific Characteristics as a Predictor of SDMP Characteristics (Adapted from Elbanna, 2010)

Variables	Procedural Rationality Model 1		Comprehensiveness Model 2		Behavioural Integration Model 3		Intuition Model 4		Political Behaviour Model 5	
	Restricted Model	Full Model	Restricted Model	Full Model	Restricted Model	Full Model	Restricted Model	Full Model	Restricted Model	Full Model
Top Management Team										
TMT Expertise	0.334**	0.355**	0.222**	0.244**	0.348**	0.336**	-0.209*	-0.178*	-0.100	-0.047
Cognitive Diversity	-0.206**	-0.177*	-0.168*	-0.161*	-0.325**	-0.307**	0.035	0.057	0.151	0.171*
Power Decentralisation	0.074	0.069	0.095	0.097	0.049	0.043	-0.084	-0.077	-0.163*	-0.157*
External Environment										
Environmental Dynamism	-0.002	-0.042	0.112	0.101	0.127	0.100	-0.057	-0.071	-0.079	-0.097
Environmental Hostility-Munificence	0.107	0.107	0.171*	0.170*	-0.038	-0.037	-0.071	-0.068	0.033	0.033
Firm Characteristics										
External Control	-0.035	-0.078	0.145	0.126	-0.071	-0.090	0.099	0.111	0.238**	0.220**
Size	0.023	0.019	0.029	0.033	0.020	0.010	-0.133	-0.123	0.100	0.113
Past Performance	0.046	0.038	0.058	0.058	-0.031	-0.041	-0.048	-0.028	-0.095	-0.081
Slack Resources	0.166*	0.168*	0.063	0.063	0.039	0.044	-0.003	-0.024	-0.052	-0.066
SD Specific Characteristics										
Familiarity		-0.150*		-0.079		-0.045		0.103		-0.064
Time Pressure		0.168*		0.052		0.112		-0.059		0.022
Uncertainty		-0.213**		-0.043		-0.168*		0.252**		0.091
Magnitude of Impact		0.035		0.007		0.019		0.147		0.081
R^2	0.246	0.332	0.205	0.215	0.345	0.384	0.105	0.186	0.153	0.175
Adjusted R^2	0.203	0.275	0.160	0.149	0.308	0.332	0.055	0.118	0.105	0.106
F	5.765**	5.913**	4.567**	3.261**	9.314**	7.435**	2.078*	2.732**	3.191**	2.535**
ΔR^2 from restricted models		**0.085**		**0.009**		**0.039**		**0.081**		**0.022**
ΔF		4.955**		0.462		2.445*		3.866**		1.049

*Significant at 0.05 level
**Significant at 0.01 level

Hypothesis 3 states that: **External environmental variables will account for relatively less variance in SDMP characteristics, compared to the variance attributable to the TMT, SD specific characteristics, and firm characteristics.** The same procedure was followed to test hypothesis 3, as was used for hypotheses 1 and 2. Table 8.2.1.3 shows the results of the test of hypothesis 3. The external environment is largely insignificant compared to the influence of the three other categories of contextual variables in explaining variance in the SDMP characteristics. For example, the variables pertaining to the external environment only explain an additional 1% of the variance in procedural rationality, 0.009% in behavioural integration, 1% in intuition, and 0.08% in political behaviour above and beyond the variance explained by the TMT, SD specific characteristics, and firm characteristics. However, the external environment does explain a significant amount of variance ($\Delta R^2 = 0.042$, $p \leq 0.05$) in comprehensiveness above and beyond the variance explained by the other three categories of contextual variables. Therefore, hypothesis 3 is only partially supported.

Table 8.2.1.3 Hierarchical Regression Results: The External Environment as a Predictor of SDMP Characteristics (Adapted from Elbanna, 2010)

Variables	Procedural Rationality Model 1		Comprehensiveness Model 2		Behavioural Integration Model 3		Intuition Model 4		Political Behaviour Model 5	
	Restricted Model	Full Model	Restricted Model	Full Model	Restricted Model	Full Model	Restricted Model	Full Model	Restricted Model	Full Model
Top Management Team										
TMT Expertise	0.354**	0.355**	0.258**	0.244**	0.345**	0.336**	-0.187*	-0.178*	-0.056	-0.047
Cognitive Diversity	-0.184*	-0.177*	-0.160	-0.161*	-0.300**	-0.307**	0.055	0.057	0.163*	0.171*
Power Decentralisation	0.056	0.069	0.080	0.097	0.050	0.043	-0.052	-0.077	-0.163*	-0.157*
SD Specific Characteristics										
Familiarity	-0.151*	-0.150*	-0.074	-0.079	-0.042	-0.045	0.100	0.103	-0.068	-0.064
Time Pressure	0.172**	0.168*	0.082	0.052	0.123	0.112	-0.076	-0.059	0.011	0.022
Uncertainty	0.024	-0.213**	-0.040	-0.043	-0.171*	-0.168*	0.252**	0.252**	0.094	0.091
Magnitude of Impact		0.035	0.015	0.007	0.036	0.019	0.139	0.147	0.065	0.081
Firm Characteristics										
External Control	-0.056	-0.078	0.143	0.126	-0.107	-0.090	0.108	0.111	0.236**	0.220**
Size	0.036	0.019	0.039	0.033	-0.006	0.010	-0.122	-0.123	0.128	0.113
Past Performance	0.025	0.038	0.023	0.058	-0.043	-0.041	-0.011	-0.028	-0.079	-0.081
Slack Resources	0.167*	0.168*	0.059	0.063	0.043	0.044	-0.022	-0.024	-0.066	-0.066
External Environment										
Environmental Dynamism		-0.042		0.101		0.100		-0.071		-0.097
Environmental Hostility-Munificence		0.107		0.170*		-0.037		-0.068		0.033
R^2	0.321	0.332	0.173	0.215	0.375	0.384	0.176	0.186	0.167	0.175
Adjusted R^2	0.273	0.275	0.115	0.149	0.331	0.332	0.118	0.118	0.109	0.106
F	6.750**	5.913**	2.982**	3.261**	8.568**	7.435**	3.047**	2.732**	2.863**	2.535**
ΔR^2 from restricted models		**0.010**		**0.042**		**0.009**		**0.010**		**0.008**
ΔF		1.211		4.139*		1.126		0.996		0.773

*Significant at 0.05 level
**Significant at 0.01 level

Hypothesis 4 states that: **Firm characteristics will account for a significant amount of variance in SDMP characteristics, above and beyond the variance attributable to the TMT, SD specific characteristics, and the external environment.** The same procedure was followed to test hypothesis 4, as was used for hypotheses 1, 2, and 3. Table 8.2.1.4 shows the results of the test of hypothesis 4. It is evident that firm characteristics only explain a significant amount of variance in political behaviour ($\Delta R^2 = 0.062$, $p \leq 0.05$) above and beyond the variance explained by the TMT, SD specific characteristics, and the external environment. Firm characteristics do not explain a significant amount of variance in procedural rationality ($\Delta R^2 = 0.033$), comprehensiveness ($\Delta R^2 = 0.024$), behavioural integration ($\Delta R^2 = 0.01$), or intuition ($\Delta R^2 = 0.027$) above and beyond that explained by the other categories of contextual variables. Therefore, hypothesis 4 is only partially supported.

Table 8.2.1.4 Hierarchical Regression Results: Firm Characteristics as a Predictor of SDMP Characteristics (Adapted from Elbanna, 2010)

Variables	Procedural Rationality Model 1		Comprehensiveness Model 2		Behavioural Integration Model 3		Intuition Model 4		Political Behaviour Model 5	
	Restricted Model	Full Model	Restricted Model	Full Model	Restricted Model	Full Model	Restricted Model	Full Model	Restricted Model	Full Model
Top Management Team										
TMT Expertise	0.356**	0.355**	0.239**	0.244**	0.340**	0.336**	-0.178*	-0.178*	-0.050	-0.047
Cognitive Diversity	-0.155*	-0.177*	-0.166*	-0.161*	-0.296**	0.307**	0.046	0.057	0.144	0.171*
Power Decentralisation	0.059	0.069	0.105	0.097	0.040	0.043	-0.067	-0.077	-0.116	-0.157*
SD Specific Characteristics										
Familiarity	-0.139	-0.150*	-0.091	-0.079	-0.035	-0.045	0.075	0.103	-0.089	-0.064
Time Pressure	0.150*	0.168*	0.070	0.052	0.093	0.112	-0.040	-0.059	0.051	0.022
Uncertainty	-0.214**	-0.213**	-0.045	-0.043	-0.167*	-0.168*	0.267**	0.252**	0.088	0.091
Magnitude of Impact	0.062	0.035	0.011	0.007	0.031	0.019	0.137	0.147	0.075	0.081
External Environment										
Environmental Dynamism	-0.040	-0.042	0.072	0.101	0.114	0.100	-0.065	-0.071	-0.140	-0.097
Environmental Hostility-Munificence	0.089	0.107	0.189*	0.170*	-0.047	-0.037	-0.086	-0.068	0.101	0.033
Firm Characteristics										
External Control		-0.078		0.126		-0.090		0.111		0.220**
Size		0.019		0.033		0.010		-0.123		0.113
Past Performance		0.038		0.058		-0.041		-0.028		-0.081
Slack Resources		0.168*		0.063		0.044		-0.024		-0.066
R^2	0.299	0.332	0.215	0.215	0.374	0.384	0.159	0.186	0.114	0.175
Adjusted R^2	0.259	0.275	0.149	0.149	0.338	0.332	0.112	0.118	0.064	0.106
F	7.521**	5.913**	4.177**	3.261**	10.550**	7.435**	3.347**	2.732**	2.266**	2.535**
ΔR^2 from restricted models		**0.033**		**0.024**		**0.010**		**0.027**		**0.062**
ΔF		1.908		1.162		0.641		1.291		2.895*

*Significant at 0.05 level
**Significant at 0.01 level

Table 8.2.1.5 summarises the results of the tests of the first group of hypotheses. As is evident, the TMT emerges as the most significant theoretical perspective, explaining the most variance in procedural rationality, comprehensiveness, and behavioural integration above and beyond the variance explained by the other theoretical perspectives. SD specific characteristics also emerge as one of the most significant theoretical perspectives and explain the most significant amount of variance in intuition, and second most amount of variance in procedural rationality, and behavioural integration. By comparison, the external environment appears to be a less significant contextual influence on SDMP characteristics, and is only significant in explaining the variance in comprehensiveness. Finally, firm characteristics also appear to be of less importance than the TMT and SD specific characteristics in influencing SDMP characteristics; firm characteristics only explain a significant amount of variance in political behaviour relative to the influence of other contextual variables.

Having presented the results of the tests of the first group of hypotheses, the next section proceeds to discuss the results of the second group of hypotheses concerning the effects of SDMP characteristics on SDMP outcomes.

Table 8.2.1.5 Summary of Relative Variance Explained: First Group of Hypotheses

	SDMP Characteristic				
Theoretical Perspective	**Procedural Rationality**	**Comprehensiveness**	**Behavioural Integration**	**Intuition**	**Political Behaviour**
Top Management Team	17.9% ($p \leq 0.01$)	10.9% ($p \leq 0.01$)	24.3% ($p \leq 0.01$)	4.4% ($p \leq 0.05$)	5.5% ($p \leq 0.05$)
SD Specific Characteristics	8.5% ($p \leq 0.01$)	0.09% (n.s.)	3.9% ($p \leq 0.05$)	8.1% ($p \leq 0.01$)	2.2% (n.s.)
External Environment	1.0% (n.s.)	4.2% ($p \leq 0.05$)	0.09% (n.s.)	1% (n.s.)	0.08% (n.s.)
Firm Characteristics	3.3% (n.s.)	3.3% (n.s.)	2.4% (n.s.)	2.7% (n.s.)	6.2% ($p \leq 0.05$)

8.2.2 The Second Group of Hypotheses: The Effects of SDMP Characteristics on SDMP Outcomes

Having examined how contextual variables influence SDMP characteristics, this section addresses the second group of hypotheses, concerning the effects of SDMP characteristics on SDMP outcomes. Specifically, this group of hypothesis examines whether SDMP characteristics explain a significant amount of variance in each of the four SDMP outcomes (SD quality, implementation success, commitment, and SD speed) above and beyond the variance explained by the contextual variables. In section 8.2.2.1 results are reported for the hypotheses concerning whether implementation success, commitment, and SD speed mediate the effects of SDMP characteristics on the overall quality of the SD.

To test the effects of SDMP characteristics on SDMP outcomes, hierarchical regression analysis was utilised, consistent with the approach adopted in related research (e.g. Elbanna and Child, 2007a; Hitt and Tyler, 1991). To examine hypotheses 5 to 6.8 (see table 8.2.2.1), four separate regression models were tested—one for each SDMP outcome. In the first block of the regression equation for each regression model the contextual variables were entered (restricted model), and in the second block the SDMP characteristics were entered (full model). This allowed the identification of the unique variance explained in the SDMP outcome by the SDMP characteristics.

Hypothesis 5 states that: **SDMP characteristics will explain a significant amount of variance in (A) SD quality, (B) implementation success, (C) commitment, and (D) SD speed, above and beyond the variance explained by the TMT, SD specific characteristics, the external environment, and firm characteristics.** The results of this test of hypothesis are shown in table 8.2.2.1, and SDMP characteristics explain a significant amount of variance in SD quality (ΔR^2 = 0.088, $p \leq 0.01$), implementation success ($\Delta R^2 = 0.057$, $p \leq 0.01$), and SD speed ($\Delta R^2 = 0.101$, $p \leq$ 0.01) above and beyond the variance explained by contextual variables. However, SDMP characteristics do not explain a significant amount of variance in commitment ($\Delta R^2 = 0.015$) above and beyond the variance explained by contextual variables. Therefore, hypothesis 5 is partially supported. It should be noted, however, that in this regression equation the number of independent variables exceeds the maximum number recommended for a sample size of 169 cases (Green, 1991). The sample size required to test the R^2 in this hypotheses ideally is 194 ((50 + (8 x k), where k is the number of independent variables (Green, 1991). This is recognised as a limitation and is discussed in chapter 9 (section 9.5.6).

Table 8.2.2.1 Hierarchical Regression Results: The Effects of SDMP Characteristics on SDMP Outcomes Relative to Context

Variables	SD Quality Model 1		Implementation Success Model 2		Commitment Model 3		SD Speed Model 4	
	Restricted Model	Full Model (1)	Restricted Model	Full Model (2)	Restricted Model	Full Model (3)	Restricted Model	Full Model (4)
Top Management Team								
TMT Expertise	0.18*	0.025	0.265**	0.129	0.080	0.024	-0.034	-0.049
Cognitive Diversity	-0.186*	-0.074	-0.270**	-0.174*	-0.443**	-0.405**	-0.080	-0.015
Power Decentralisation	-0.039	-0.079	-0.091	-0.112	-0.073	-0.072	-0.143	-0.161*
SD Specific Characteristics								
Familiarity	-0.047	-0.004	-0.028	0.009	0.083	0.098	-0.014	-0.045
Time Pressure	0.056	-0.004	0.095	0.039	0.091	0.071	0.238**	0.248**
Uncertainty	-0.252**	-0.162*	-0.260**	-0.190*	-0.083	-0.068	-0.255**	-0.236**
Magnitude of Impact	0.199*	0.194*	0.255**	0.238**	0.067	0.054	0.199*	0.219**
External Environment								
Environmental Dynamism	-0.022	-0.039	-0.016	-0.022	-0.024	-0.033	-0.095	-0.144
Environmental Hostility-Munificence	0.026	0.001	0.089	0.077	-0.002	-0.011	0.057	0.101
Firm Characteristics								
External Control	-0.140	-0.094	-0.116	-0.082	0.006	-0.008	-0.107	-0.056
Size	-0.050	-0.050	-0.099	-0.100	-0.028	-0.037	-0.110	-0.094
Past Performance	-0.044	-0.056	-0.030	-0.030	-0.041	-0.034	-0.017	-0.008
Slack Resources	0.167*	0.110	0.144*	0.098	0.136*	0.128	0.034	0.051
SDMP Characteristics								
Procedural Rationality		0.250*		0.228*		0.019		-0.218
Comprehensiveness		0.039		-0.011		0.067		-0.045
Behavioural Integration		0.155		0.189*		0.122		0.271**
Intuition		0.006		0.038		0.026		-0.031
Political Behaviour		-0.076		-0.007		0.071		-0.154*
R^2	0.268	0.356	0.434	0.491	0.307	0.322	0.218	0.318
Adjusted R^2	0.206	0.278	0.387	0.430	0.248	0.240	0.152	0.236
F	4.354**	4.600**	9.153**	8.038**	5.270**	3.954**	3.317**	3.889**
ΔR^2 from restricted models		**0.088**		**0.057**		**0.015**		**0.101**
ΔF		4.104**		3.341**		0.676		4.422**

*Significant at 0.05 level
**Significant at 0.01 level

Hypothesis 6.1 stated that: Procedural rationality will be positively related to (A) SD quality, (B) implementation success, and (C) commitment.

Hypothesis 6.2 stated that: Procedural rationality will be negatively related to SD speed.

Hypothesis 6.3 stated that: Comprehensiveness will be positively related to (A) SD quality, (B) implementation success, and (C) commitment.

Hypothesis 6.4 stated that: Comprehensiveness will be negatively related to SD speed.

Hypothesis 6.5 stated that: Behavioural integration will be positively related to (A) SD quality, (B) implementation success, (C) commitment, and (D) SD speed.

Hypothesis 6.6 stated that: Intuition will be negatively related to (A) SD quality, (B) implementation success, and (C) commitment.

Hypothesis 6.7 stated that: Intuition will be positively related to SD speed.

Hypothesis 6.8 stated that: Political behaviour will be negatively related to (A) SD quality, (B) implementation success, (C) commitment, and (D) SD speed.

These hypotheses were tested using multiple regression analysis to enable the assessment of the relative effect of each SDMP characteristic, and the results are shown in table 8.2.2.2.

Hypothesis 6.1 is partially supported, because procedural rationality is positively associated with SD quality ($\beta = 0.381$, $p \leq 0.01$) and implementation success ($\beta = 0.423$, $p \leq 0.01$). However, procedural rationality was not significantly related with commitment ($\beta = 0.179$, n.s.). Also, hypothesis 6.2 is not supported because procedural rationality is not significantly related to SD speed ($\beta = -0.032$, n.s.).

Hypotheses 6.3 and 6.4 are both not supported because comprehensiveness was not significantly related to any of the four SDMP outcomes.

Hypothesis 6.5 is supported because behavioural integration is positively associated with SD quality ($\beta = 0.234$, $p \leq 0.01$), implementation success ($\beta = 0.350$, $p \leq 0.01$), commitment ($\beta = 0.298$, $p \leq 0.01$), and SD speed ($\beta = 0.312$, $p \leq 0.01$).

Hypotheses 6.6 to 6.7 are not supported because intuition is not significantly related to any of the four SDMP outcomes. Hypothesis 6.8 is only partially supported because political behaviour is only significantly and negatively related to SD speed ($\beta = -0.154$, $p \leq 0.05$), and is not significantly related to SD quality, implementation success, or commitment.

It is evident from table 8.2.2.1 and table 8.2.2.2 that procedural rationality is a robust predictor of SD quality, even controlling for all contextual variables. Similarly, procedural rationality and behavioural integration are also both robust predictors of implementation success, whilst behavioural integration also consistently predicts SD speed. However, contrary to expectation, comprehensiveness, intuition and political behaviour do not appear to be significantly related to any of the SDMP outcomes.

Table 8.2.2.2 Multiple Regression Results: The Effects of SDMP Characteristics on SDMP Outcomes

	SD Quality Model 1	Implementation Success Model 2	Commitment Model 3	SD Speed Model 4
Procedural Rationality	0.381**	0.423**	0.179	-0.032
Comprehensiveness	-0.015	-0.034	0.071	-0.107
Behavioural Integration	0.234**	0.350**	0.298**	0.312**
Intuition	0.041	0.121	0.113	0.050
Political Behaviour	-0.082	-0.005	0.067	-0.093
R^2	0.273	0.339	0.153	0.114
Adjusted R^2	0.250	0.319	0.127	0.086
F	12.220**	16.714**	5.870**	4.175**

*Significant at 0.05 level
**Significant at 0.01 level

8.2.2.1 Tests for Mediation

Hypotheses 7.1 to 7.3 concern the mediating effects of implementation success, commitment, and SD speed on the relationships between context, SDMP characteristics and SD quality. To test these hypotheses Baron and Kenny's (1986) approach was followed. Other approaches were considered (e.g. MacKinnon et al. 2002; Shrout and Bolger, 2002). However, Baron and Kenny's (1986) approach was followed because of its widespread usage, particularly in the strategy and SDMP literature (e.g. Korsgaard et al. 1995; Quigley and Hambrick, 2012; Simons et al. 1999). Per Baron and Kenny (1986), to demonstrate mediation, three conditions are necessary: (i) the independent variables (contextual variables and SDMP characteristics) and mediator variable (implementation success, commitment, SD speed) must be significantly related; (ii) the independent variables and dependent variable (SD quality) must be significantly related, and; (iii) when the independent variables, mediator variables, and dependent variable are included in the same regression equation, the independent variable and dependent variable must no longer be significantly related. Table 8.2.2.3 presents the results of the tests of hypotheses 7.1 to 7.3.

Hypothesis 7.1 states that: **Implementation success will mediate the effects of SDMP characteristics on SD quality.** In order for this hypothesis to be supported at least one of the SDMP characteristics must be significantly related to SD quality, and this condition is met because procedural rationality is significantly related to SD quality (β 0.250, $p \leq 0.05$) (see table 8.2.2.1). Also, procedural rationality must be significantly related to implementation success—and again, this condition is satisfied (β 0.228, $p \leq 0.05$) (see table 8.2.2.1). Finally, for mediation effects to be demonstrated, procedural rationality must no longer be significantly related to SD quality when implementation success is added to the regression equation, and again this criterion is satisfied (β 0.042, n.s.) (see table 8.2.2.3, full model). Therefore hypothesis 7.1 is supported.

The same three criteria were used to examine hypotheses 7.2 and 7.3. **Hypothesis 7.2** states that: **Commitment will mediate the effects of SDMP characteristics on SD quality.** However, this hypothesis is not supported because none of the SDMP characteristics are significantly related to commitment (see table 8.2.2.1). Furthermore, procedural rationality remains significantly related to SD quality (β 0.250, $p \leq 0.05$) when commitment is added to the regression equation (see table 8.2.2.3).

Hypothesis 7.3 states that: **SD speed will mediate the effects of SDMP characteristics on SD quality.** Again, this hypothesis is not supported because procedural rationality retained a significant and positive relationship with SD quality (β 0.257, $p \leq 0.05$) once SD speed had been entered into the regression equation. Furthermore, procedural rationality and SD speed are not significantly related, which would be required in order to demonstrate mediation.

Table 8.2.2.3 Hierarchical Regression Results: Tests for Mediation

Variables	Implementation Success as Mediator Model 1		Commitment as Mediator Model 2		SD Speed as Mediator Model 3	
	Restricted Model	**Full Model**	**Restricted Model**	**Full Model**	**Restricted Model**	**Full Model**
Top Management Team						
TMT Expertise	0.025	-0.093	0.025	0.015	0.025	0.027
Cognitive Diversity	-0.074	0.085	-0.074	0.103	-0.074	-0.073
Power Decentralisation	-0.079	0.023	-0.079	-0.047	-0.079	-0.074
SD Specific Characteristics						
Familiarity	-0.004	-0.012	-0.004	-0.047	-0.004	-0.002
Time Pressure	-0.004	-0.040	-0.004	-0.035	-0.004	-0.012
Uncertainty	-0.162*	0.011	-0.162*	-0.133*	-0.162*	-0.155*
Magnitude of Impact	0.194*	-0.024	0.194*	0.170*	0.194*	0.187*
External Environment						
Environmental Dynamism	-0.039	-0.018	-0.039	-0.024	-0.039	-0.034
Environmental Hostility-Munificence	0.001	-0.070	0.001	0.005	0.001	-0.003
Firm Characteristics						
External Control	-0.094	-0.018	-0.094	-0.091	-0.094	-0.092
Size	-0.050	0.041	-0.050	-0.033	-0.050	-0.046
Past Performance	-0.056	-0.028	-0.056	-0.041	-0.056	-0.055
Slack Resources	0.110	0.020	0.110	0.054	0.110	0.108
SDMP Characteristics						
Procedural Rationality	0.250*	0.042	0.250*	0.241*	0.250*	0.257*
Comprehensiveness	0.039	0.049	0.039	0.011	0.039	0.041
Behavioural Integration	0.155	-0.017	0.155	0.102	0.155	0.146
Intuition	-0.006	-0.041	-0.006	-0.015	-0.006	-0.005
Political Behaviour	-0.076	-0.070	-0.076	-0.107	-0.076	-0.071
Mediator	-	0.914**	-	0.437**	-	0.033
R^2	0.356	0.781	0.356	0.485	0.356	0.356
Adjusted R^2	0.278	0.753	0.278	0.419	0.278	0.274
F	4.600**	27.922**	4.600**	7.382**	4.600**	4.342**
ΔR^2 from restricted models		0.425		0.129		0.001
ΔF		288.850**		37.388**		0.168

*Significant at 0.05 level
**Significant at 0.01 level

The results of the tests of hypothesis 5 to 7.3 show that SDMP characteristics explain a significant amount of variance in SDMP outcomes above and beyond that explained by contextual variables.

Furthermore, the results of the present study show that implementation success mediates the effects of SDMP characteristics on the overall quality of the SD.

The next section proceeds to examine hypotheses 8 to 11.2, concerning the moderating effects of contextual variables on the relationships between SDMP characteristics and outcomes.

8.2.3 The Third Group of Hypotheses: The Moderating Effects of Contextual Variables on the Relationships between SDMP Characteristics and Outcomes

This section of the chapter tests the remaining hypotheses (8 to 11.2) which concern the moderating effects of contextual variables on the relationships between SDMP characteristics and SDMP outcomes. Section 8.2.3.1 examines the hypothesis concerning the moderating effects of SD familiarity and TMT expertise on the relationship between intuition and SD quality. Section 8.2.3.2 presents the results of the tests of hypotheses concerning the moderating effects of the external environment on the relationships between rationality, intuition, and SD quality. Section 8.2.3.3 examines several hypotheses concerning the effects of political behaviour on SDMP outcomes, and the moderating effects of the TMT. Finally, section 8.2.3.4 examines hypotheses concerning the relationship between SD speed and SD quality, and the moderating effects of the external environment.

8.2.3.1 Intuition and SD Quality: The Moderating Effects of SD Familiarity and TMT Expertise

Hypothesis 8 concerns the effects of intuition on SD quality, and how both SD familiarity and TMT expertise may affect this relationship. Specifically, **hypothesis 8** states that: **There is a three-way interaction between intuition, SD familiarity and TMT expertise, such that there will be a positive relationship between intuition and SD quality when the SD is familiar and the TMT**

have expertise. To test this hypothesis, hierarchical regression analysis was used, following the procedures recommended by Dawson and Richter (2006). Using this approach, the dependent variable (SD quality) is regressed onto the independent variable (intuition). Subsequently product terms are entered into the regression equation for intuition*SD familiarity, intuition*TMT expertise, SD familiarity*TMT Expertise, and finally, intuition*SD familiarity*TMT expertise.

A number of control variables are included in the regression model (see table 8.2.3.1), in order to control for other influences on the overall quality of the SD. It was not possible to include all of the SDMP characteristics and contextual variables in the regression equation, owing to sample size limitations which imposed a limit of 15 independent variables (Green, 1991). Therefore, variables were included that significantly influenced SD quality in the previous regression models. Hence, the following variables are controlled for due to their significant effects on SD quality: Implementation success, commitment, procedural rationality, behavioural integration, SD uncertainty, and SD magnitude of impact. The total number of predictor variables, including the interaction terms for this regression model is 13, which requires a minimum sample size of 154 i.e. (15x8(+50)) per Green (1991).

Table 8.2.3.1 Moderated Regression Results: The Moderating Effects of SD Familiarity and TMT Expertise on the Relationship between Intuition and SD Quality

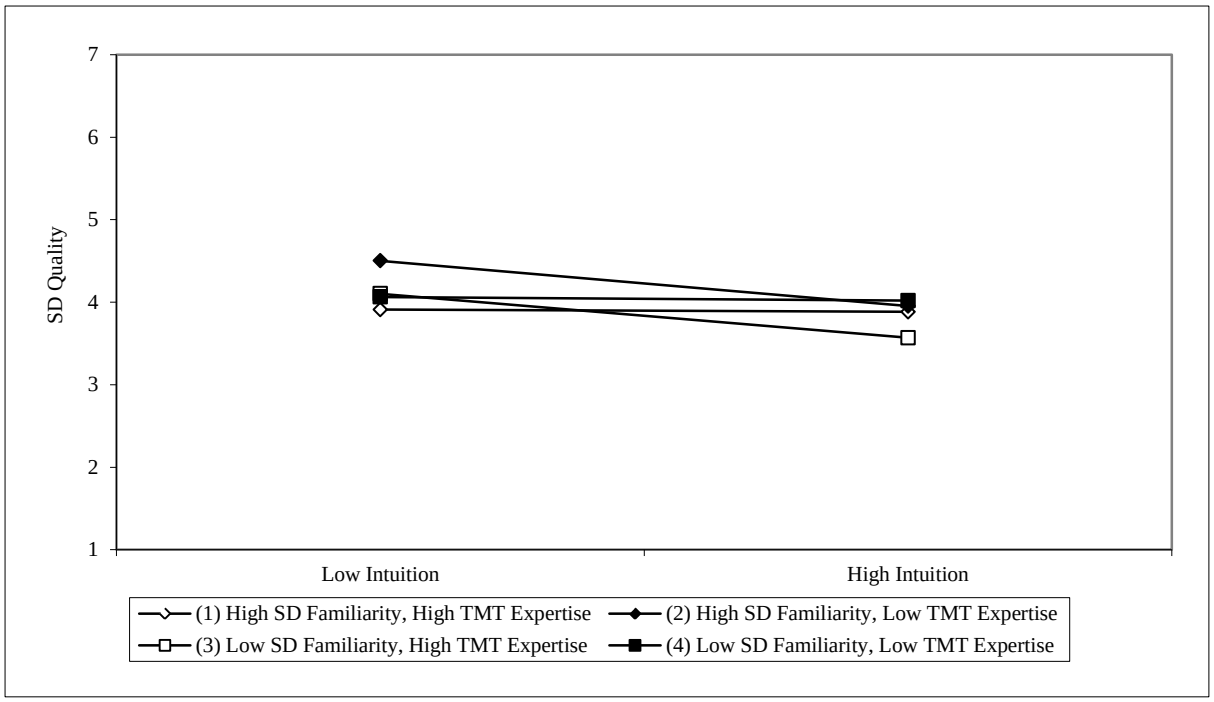
Variables	Restricted Model (Model 1)	Interaction Effects (Model 2)	Interaction Effects (Model 3)
Control Variables:			
Implementation Success	0.848**	0.841**	0.820**
Commitment	0.055	0.055	0.076
Procedural Rationality	0.048	0.057	0.068
Behavioural Integration	-0.007	-0.012	-0.030
SD Uncertainty	0.002	0.009	-0.003
SD Magnitude of Impact	-0.037	-0.029	-0.022
Independent Variables			
Intuition	-0.067	-0.066	-0.103
SD Familiarity	0.004	0.015	0.044
TMT Expertise	-0.103*	-0.080	-0.096
Interaction Terms			
Intuition*SD Familiarity		-0.003	0.000
Intuition*TMT Expertise		-0.029	0.003
SD Familiarity*TMT Expertise		0.059	-0.030
Intuition*SD Familiarity*TMT Expertise			0.164**
R^2	0.762	0.766	0.779
Adjusted R^2	**0.748**	**0.748**	**0.760**
F	**56.485****	**42.591****	**42.000****
ΔR^2 from restricted model		**0.004**	**0.013**
ΔF		**0.978**	**8.931****

*Significant at 0.05 level
**Significant at 0.01 level

As is evident in table 8.2.3.1 (model 3), the results indicate that there is a significant three-way interaction between intuition, SD familiarity and TMT expertise (β 0.164, $p \leq 0.01$). Also, the inclusion of the three-way interaction term produces a significant change in R^2 (0.013, $p \leq 0.01$). Thus, the results of the regression analysis provide support for hypothesis 8.

Following the recommendations of Dawson and Richter (2006), an additional post-hoc analysis was performed, which entails graphically[3] and statistically inspecting the slopes of the regression output. This approach provides a visual aid for inspecting the three-way interaction. The results are shown in figure 8.2.3.1.

Figure 8.2.3.1 Inspection of Three-Way Interaction



The visual inspection of the slopes provides only limited support for hypothesis 8, because slope 1 (high SD familiarity, and high TMT expertise) attains broadly the same level of SD quality when matched to high levels of intuition.

[3] The graphs used for visually inspecting the two-way and three-way interactions reported in this chapter were downloaded from <www.jeremydawson.co.uk/slopes.htm> [Accessed 14 August 2013]. These graphs have been published in international peer reviewed journals graded as 4 or 4* in the 2010 Association of Business Schools journal rankings guide e.g. Ng and Feldman, (2012); Olson et al. (2007a); Richter et al. (2006).

Again using the Dawson and Richter (2006) procedures, the statistical significance of the test of slopes provides only limited support for hypothesis 8. Slope 1 differs from slope 2 ($p = 0.118$), and slope 3 ($p = 0.108$), although statistically it does not differ significantly from slope 4 ($p = 0.927$). However, to a large extent this is to be expected given the sample size ($n = 169$), because Dawson and Richter (2006) state that to obtain statistically significant differences in the regression slopes, sample sizes of between 250 and 500 cases are required.

To probe further the three-way interaction sub-group analysis was performed (Ng and Feldman, 2012). This entailed splitting the sample at the median of SD familiarity and for both the low and high SD familiarity sub-samples, SD quality was regressed onto the intuition*TMT expertise interaction (controlling for the main effects of intuition and TMT expertise). In the low SD familiarity sample, the intuition*TMT expertise interaction was negative but non-significant ($\beta = -0.137$, n.s.). However, in the high SD familiarity sub-sample the intuition*TMT expertise interaction produced a positive, albeit non-significant effect ($\beta = 0.189$). This process was repeated, but splitting the sample at the median of TMT expertise, and for both the low and high TMT expertise sub-samples, SD quality was regressed onto the intuition*SD familiarity interaction (controlling for the main effects of intuition and SD familiarity). In the low TMT expertise sub-sample the intuition*SD familiarity interaction produced a non-significant and negative effect ($\beta = -0.19$, n.s.). Finally, in the high TMT expertise sub-sample the intuition*SD familiarity interaction produced a positive but non-significant interaction ($\beta = 0.087$, n.s.). Therefore, the sub-sample analysis lends moderate support to the hypothesis, because as expected, under conditions of both high TMT expertise and SD familiarity, intuition positively influences SD quality. Thus, hypothesis 8 is supported.

8.2.3.2 Procedural Rationality, Intuition, and SD Quality: The Moderating Effects of Environmental Hostility-Munificence

Two hypotheses are stated concerning the moderating effects of environmental hostility-munificence on the relationships between procedural rationality, intuition, and SD quality.

Hypothesis 9.1 states that: **Environmental hostility-munificence moderates the negative relationship between intuition and SD quality, such that in high hostility environments the relationship is stronger.**

Hypothesis 9.2 states that: **Environmental hostility-munificence moderates the positive relationship between procedural rationality and SD quality, such that in high hostility environments the relationship is stronger.**

To test these two hypotheses, multiple moderated regression analysis was used. Controlling for the same variables as in hypothesis 8, the main effects of procedural rationality, intuition, and environmental hostility-munificence were entered as the first step of the regression equation. In step 2, the intuition*environmental hostility-munificence interaction was entered, and in step 3, the procedural rationality*environmental hostility-munificence interaction was entered into the regression model. A significant change in R^2 between the restricted model and each of the full models (with interaction terms) was used to identify a moderation effect. As can be seen in table 8.2.3.2 both interaction terms produced significant moderating effects. Intuition*environmental hostility-munificence, as expected increased the negative effects of intuition on SD quality. Because environmental hostility-munificence is measured on a continuum, a high score indicates high hostility and low munificence. Hence, the scale was reversed so that a high score indicated a high level of munificence. Subsequently the sign changes to a positive ($\beta = 0.081$, $p \leq 0.05$), which lends support to the hypothesis that in munificent environments, the negative effects of intuition on SD quality are lessened, and in fact, intuition and environmental munificence interact such that intuition significantly and positively influences SD quality.

Also the procedural rationality*environmental hostility-munificence interaction produced a significant change in R^2 of 0.018 ($\beta = 0.136$, $p \leq 0.01$). Hence, it appears as though environmental hostility strengthens the positive effects of procedural rationality on SD quality.

Table 8.2.3.2 Moderated Regression Results: The Moderating Effects of Environmental Hostility-Munificence on the Relationships between Procedural Rationality, Intuition, and SD Quality

Variables	Restricted Model (Model 1)	Interaction Effects (Model 2)	Interaction Effects (Model 3)
Control Variables:			
Implementation Success	0.843**	0.833**	0.840**
Commitment	0.051	0.056	0.059
Behavioural Integration	-0.046	-0.042	-0.059
SD Uncertainty	0.008	0.008	0.001
SD Magnitude of Impact	-0.024	-0.031	-0.039
Independent Variables			
Intuition	-0.071	-0.067	-0.068
Procedural Rationality	0.031	0.037	0.039
Environmental Hostility-Munificence	-0.072	-0.067*	-0.077
Interaction Terms			
Intuition*Environmental Hostility-Munificence		-0.081*	
Procedural Rationality*Environmental Hostility-Munificence			0.136**
R^2	0.760	0.766	0.778
Adjusted R^2	**0.748**	**0.753**	**0.765**
F	**63.273****	**57.932 ****	**61.895****
ΔR^2 from restricted model		**0.006**	**0.018**
ΔF		**4.413***	**12.979****

*Significant at 0.05 level
**Significant at 0.01 level

To further examine the interactions, two subsequent procedures were undertaken: First, a visual inspection of the regression slopes was undertaken, and second, consistent with prior SDMP studies split sample correlation analysis was conducted (Brouthers et al. 2000; Elbanna and Child, 2007a;

Goll and Rasheed, 1997). As is evident in both figure 8.2.3.2.1 and 8.2.3.2.2, both graphs support the hypotheses, because under conditions of high environmental hostility the relationship between intuition and SD quality is diminished, but the positive effects of procedural rationality are strengthened.

Figure 8.2.3.2.1 Moderating Effects of Environmental Hostility-Munificence on the Relationship between Intuition and SD Quality

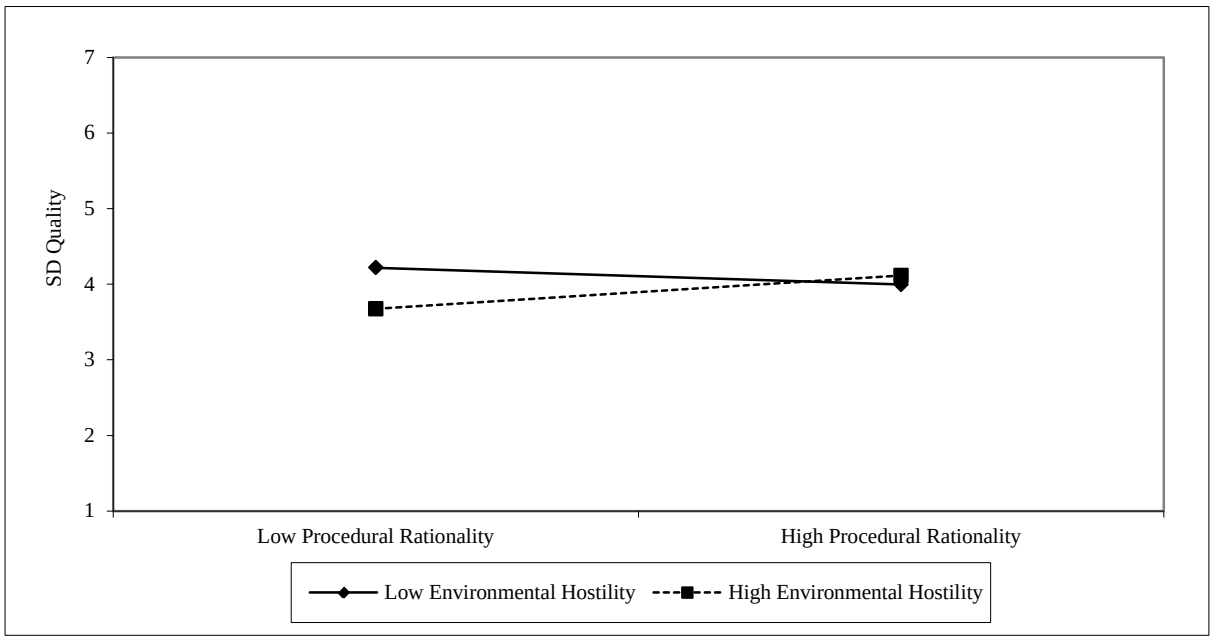
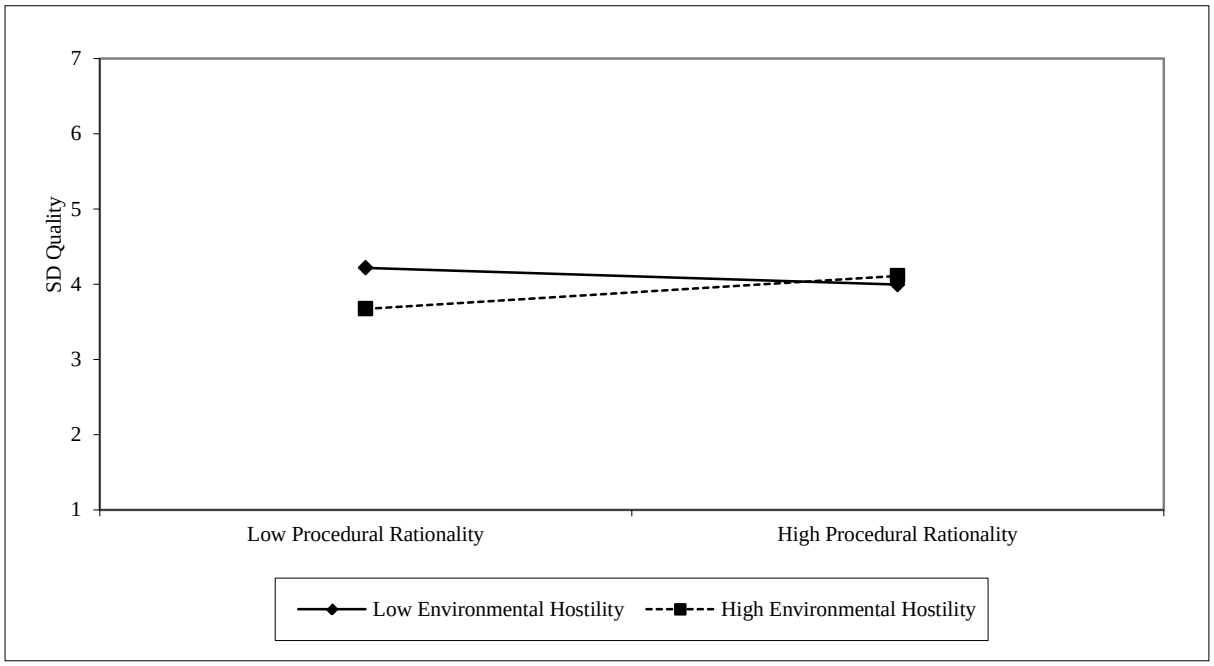


Figure 8.2.3.2.2 Moderating Effects of Environmental Hostility-Munificence on the Relationship between Procedural Rationality and SD Quality



Furthermore, the split sample correlation analysis lends further support for both hypotheses. Environmental hostility-munificence was split at the median and correlation analysis conducted between each of the independent variables (intuition and procedural rationality) and the dependent variables (SD quality). In the low hostility sub-sample, intuition was correlated to SD quality negatively but non-significantly (r = -0.098, n.s.) whereas in the high hostility sub-sample intuition was significantly and negatively correlated to SD quality (r = -0.420, $p \leq 0.01$). The same procedure was repeated for procedural rationality. In the low hostility sub-sample, procedural rationality was significantly and positively correlated to SD quality (r = 0.265, $p \leq 0.01$), however, in the high hostility sub-sample the strength of the positive correlation increased (r = 0.637, $p \leq 0.01$). Therefore, hypotheses 9.1 and 9.2 are both supported.

8.2.3.3 Political Behaviour and SDMP Outcomes: The Moderating Effects of the TMT

This group of hypotheses concern the relationship between political behaviour and SDMP outcomes, and specifically, how TMT expertise and cognitive diversity moderate these relationships.

Hypotheses 10.1 states that: **TMT expertise moderates the negative relationship between political behaviour and SD quality, such that when the TMT have expertise the relationship is weaker.**

The same procedures were followed, and the same control variables were utilised, as for the previous hypotheses in section 8.2.3. Multiple moderated regression analysis was performed, and a significant interaction was identified by assessing whether it had produced a significant change in R^2 as compared to the restricted model (no interaction effects). As is evident in table 8.2.3.3 (full model 2), the political behaviour*TMT expertise interaction produced a significant change in R^2 (0.022) (β = 0.159, $p \leq 0.01$). Furthermore, the interaction changes the nature of the effect of political behaviour from a negative effect to a positive effect.

Hypothesis 10.2 states that: **TMT expertise moderates the negative relationship between political behaviour and implementation success, such that when the TMT have expertise the relationship is weaker**. Following the same procedure as for hypothesis 10.1, as is evident in table 8.2.3.3 (full model 5) the political behaviour*TMT expertise interaction is significant ($\Delta R^2 = 0.016$, $\beta = 0.135$, $p \leq 0.05$), and again the sign alters such that whereas political behaviour on its own negatively affects implementation success, when combined with TMT expertise—it significantly and positively influences implementation success.

Hypothesis 10.3 states that: **TMT expertise moderates the negative relationship between political behaviour and commitment, such that when the TMT have expertise the relationship is weaker**.

The results presented in table 8.2.3.3 (full model 8) show that the political behaviour*TMT expertise interaction does not produce a significant effect ($\Delta R^2 = 0.001$, n.s. $\beta = 0.029$, n.s.). Therefore hypothesis 10.3 is not supported.

Finally, **hypothesis 10.4** stated that: **TMT expertise moderates the negative relationship between political behaviour and SD speed, such that when the TMT have expertise, the negative relationship is weaker**. The results in table 8.2.3.3 (full model 11) show that the political behaviour*TMT expertise interaction did not produce a significant change in R^2 (0.006) ($\beta = -0.082$, n.s.). Therefore, hypothesis 10.4 is not supported.

Hypotheses 10.5 to 10.8 concern the moderating effects of TMT cognitive diversity on the relationships between political behaviour and SDMP outcomes. The same procedures were used to test these hypotheses as for hypotheses 10.1 to 10.4.

Hypothesis 10.5 states that: **TMT cognitive diversity moderates the negative relationship between political behaviour and SD quality, such that when the TMT are cognitively diverse the relationship is stronger**. Table 8.2.3.3 (model 3) shows that the political behaviour*cognitive diversity interaction was significant ($\Delta R^2 = 0.009$, $\beta = -0.101$, $p \leq 0.05$). Hence, when the TMT are cognitively diverse it strengthens the negative effects of political behaviour on SD quality.

Hypothesis 10.6 states that: **TMT cognitive diversity moderates the negative relationship between political behaviour and implementation success, such that when the TMT are cognitively diverse**

the relationship is stronger. However, table 8.2.3.3 (model 6) shows that political behaviour*cognitive diversity interaction is non-significant ($\Delta R^2 = 0.000$, $\beta = -0.018$, n.s.). Therefore, hypothesis 10.6 is not supported.

Hypothesis 10.7 states that: **TMT cognitive diversity moderates the negative relationship between political behaviour and commitment, such that when the TMT are cognitively diverse the relationship is stronger**. However, as shown in table 8.2.3.3 (model 9) the political behaviour*cognitive diversity interaction was not significant ($\Delta R^2 = 0.001$, $\beta = -0.031$, n.s.). Thus, hypothesis 10.7 is not supported.

Finally, **hypothesis 10.8** states that: **TMT cognitive diversity moderates the negative relationship between political behaviour and SD speed, such that when the TMT are cognitively diverse the relationship is stronger**. However, as shown in table 8.2.3.3 (model 12) the political behaviour*cognitive diversity interaction was again not significant ($\Delta R^2 = 0.000$, $\beta = -0.012$, n.s.). Therefore, hypothesis 10.8 is not supported.

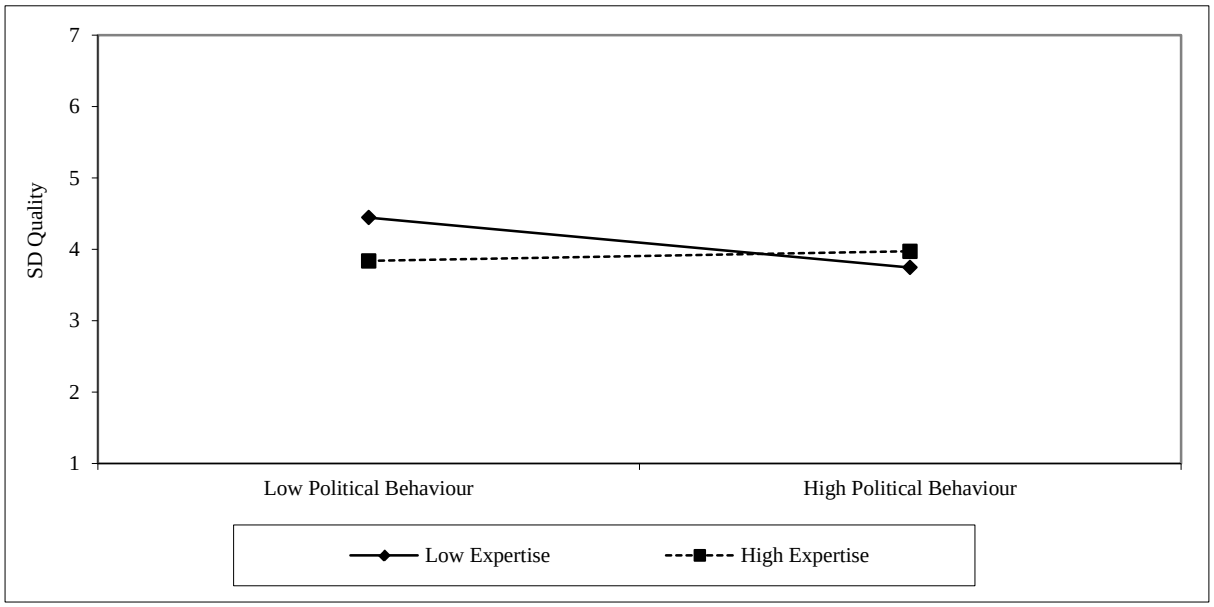
Table 8.2.3.3 Moderated Regression: The Moderating Effects of the TMT on the Relationships between Political Behaviour and SDMP Outcomes

Variables	SD Quality			Implementation Success			Commitment			SD Speed		
	Restricted Model 1	Full Model 2	Full Model 3	Restricted Model 4	Full Model 5	Full Model 6	Restricted Model 7	Full Model 8	Full Model 9	Restricted Model 10	Full Model 11	Full Model 12
Control Variables:												
Implementation Success	0.838**	0.793**	0.834**							0.098	0.121	0.098
Commitment	0.103*	0.115*	0.100*	0.409**	0.404**	0.408**				0.032	0.026	0.032
Procedural rationality	0.099*	0.076	0.101*	0.199**	0.172**	0.199**	0.058	0.053	0.059	-0.177*	-0.165	-0.176*
Behavioural Integration	-0.016	-0.047	-0.006	0.140*	0.109	0.142*	0.131	0.124	0.133	0.261**	0.277**	0.262**
SD Uncertainty	-0.002	-0.023	-0.004	-0.131*	-0.143*	-0.131*	-0.059	-0.062	-0.059	-0.177*	-0.166*	-0.177*
SD Magnitude of Impact	-0.024	-0.036	-0.047	0.220**	0.202**	0.216**	0.077	0.073	0.069	0.211**	0.217*	0.208*
Independent Variables												
Political Behaviour	-0.087*	-0.101*	-0.079	-0.043	-0.053	-0.041	0.076	0.073	0.078	-0.11	-0.102	-0.109
TMT Expertise	-0.087	-0.068	-0.086	0.087	0.100	0.087	0.040	0.043	0.040	-0.14	-0.149	-0.140
Cognitive Diversity	0.116*	0.091*	0.128**	-0.007	-0.028	-0.005	-0.395**	-0.399**	-0.391**	0.020	0.033	0.021
Interaction Terms												
Political Behaviour*TMT Expertise		0.159**			0.135*			0.029			-0.082	
Political Behaviour*Cognitive Diversity			-0.101*			-0.018			-0.031			-0.012
R^2	0.774	0.795	0.783	0.564	0.571	0.565	0.287	0.288	0.288	0.207	0.213	0.455
Adjusted R^2	0.761	0.782	0.769	0.543	0.557	0.540	0.256	0.253	0.253	0.162	0.163	0.157
F	60.349**	61.416**	56.997**	25.903**	24.462**	22.908**	9.277**	8.096**	8.102**	4.620**	4.277**	4.135**
ΔR^2 from restricted models		**0.022**	**0.009**		**0.016**	**0.000**		**0.001**	**0.001**		**0.006**	**0.000**
ΔF		16.856**	6.848*		6.199*	0.106		0.164	0.201		1.147	0.028

In order to probe the significant interactions between political behaviour and TMT expertise (hypotheses 10.1 and 10.2) and between political behaviour and cognitive diversity (hypothesis 10.5) further analysis was conducted. This comprised investigating the regression slopes visually using graphical illustrations, and by conducting split-sample correlation analysis (Brouthers et al. 2000; Elbanna and Child, 2007a; Goll and Rasheed, 1997).

As shown in figure 8.2.3.3.1, the graph illustrates the significant interaction between political behaviour and TMT expertise—when the TMT has a high level of expertise, political behaviour leads to increased SD quality. However, when the TMT has low levels of expertise, political behaviour leads to reduced SD quality.

Figure 8.2.3.3.1 Moderating Effects of TMT Expertise on the Relationship between Political Behaviour and SD Quality

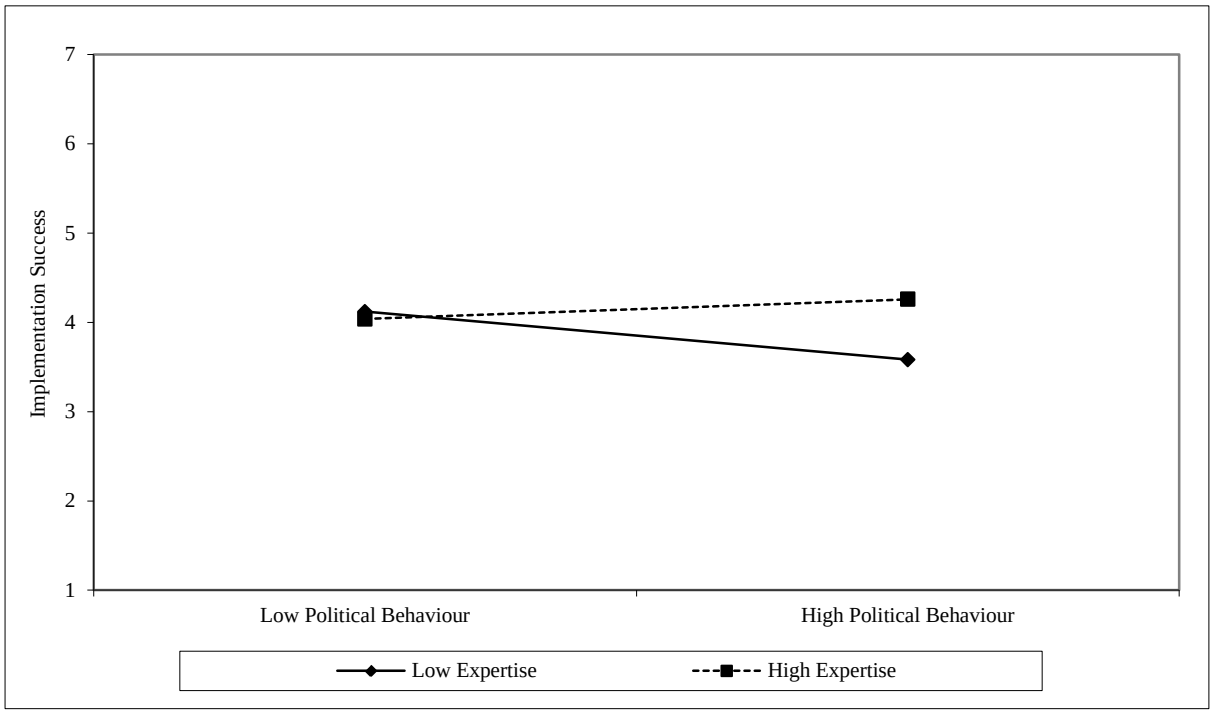


In addition, the results of the split sample correlation probing reveals moderate support for the hypothesis. Under low levels of TMT expertise, political behaviour is significantly and negatively correlated to SD quality ($r = -0.837$, $p \leq 0.01$). However, under high levels of TMT expertise,

political behaviour has a non-significant negative correlation with SD quality (r = -0.049, n.s.), which overall lends support to hypothesis 10.1. Thus, hypothesis 10.1 is supported.

Similarly, figure 8.2.3.3.2 shows how under conditions of high TMT expertise, political behaviour leads to increased implementation success, whereas under conditions of low TMT expertise, political behaviour leads to diminished implementation success.

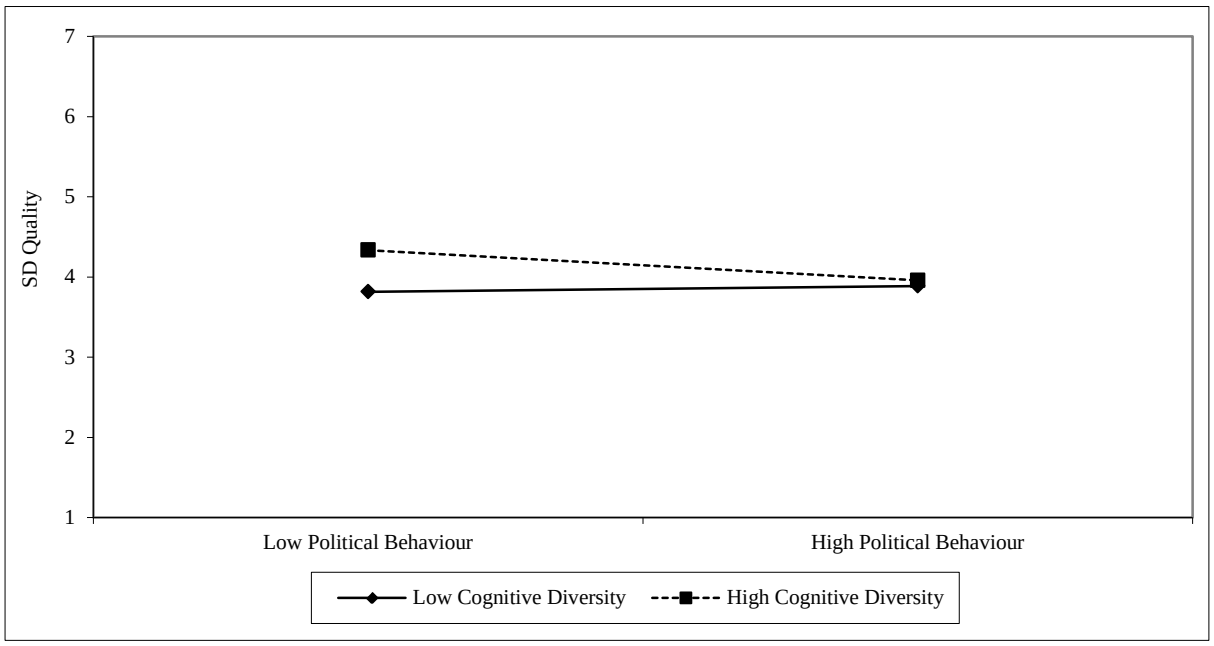
Figure 8.2.3.3.2 Moderating Effects of TMT Expertise on the Relationship between Political Behaviour and Implementation Success



The results of the split sample correlation analysis lend further support to hypothesis 10.2; in the low TMT expertise sub-sample political behaviour was significantly and negatively correlated to implementation success (r = -0.624, $p \leq 0.01$), whereas in the high TMT expertise sub-sample the correlation was non-significant (r = -0.035, n.s.). Therefore, hypothesis 10.2 is supported.

Finally, to probe the significant interaction between political behaviour and cognitive diversity (hypothesis 10.5), a visual inspection of the regression slopes was performed using graphical analysis, and split sample correlation analysis was also undertaken. Figure 8.2.3.3.3 shows that under high levels of cognitive diversity political behaviour leads to reduced SD quality.

Figure 8.2.3.3.3 Moderating Effects of TMT Cognitive Diversity on the Relationship between Political Behaviour and SD Quality



The results of the split sample correlation analysis show that under low levels of cognitive diversity political behaviour is not significantly related to SD quality (r = -0.153, n.s.), and under conditions of high cognitive diversity political behaviour remains not significantly correlated to SD quality, although the r increases (r = -0.363, n.s.). Overall there is sufficient evidence to conclude that hypothesis 10.5 is supported.

8.2.3.4 SD Speed and SD Quality: The Moderating Effects of the External Environment

Hypotheses 11.1 and 11.2 concern the effects of SD speed on SD quality and the moderating role of environmental dynamism and environmental hostility-munificence. Specifically, **hypothesis 11.1** states that: **Environmental dynamism moderates the positive relationship between SD speed and SD quality, such that when the environment is dynamic the relationship is stronger.**

Also, **Hypothesis 11.2** states that: **Environmental hostility-munificence moderates the positive relationship between SD speed and SD quality, such that when the environment is hostile the relationship is weaker.**

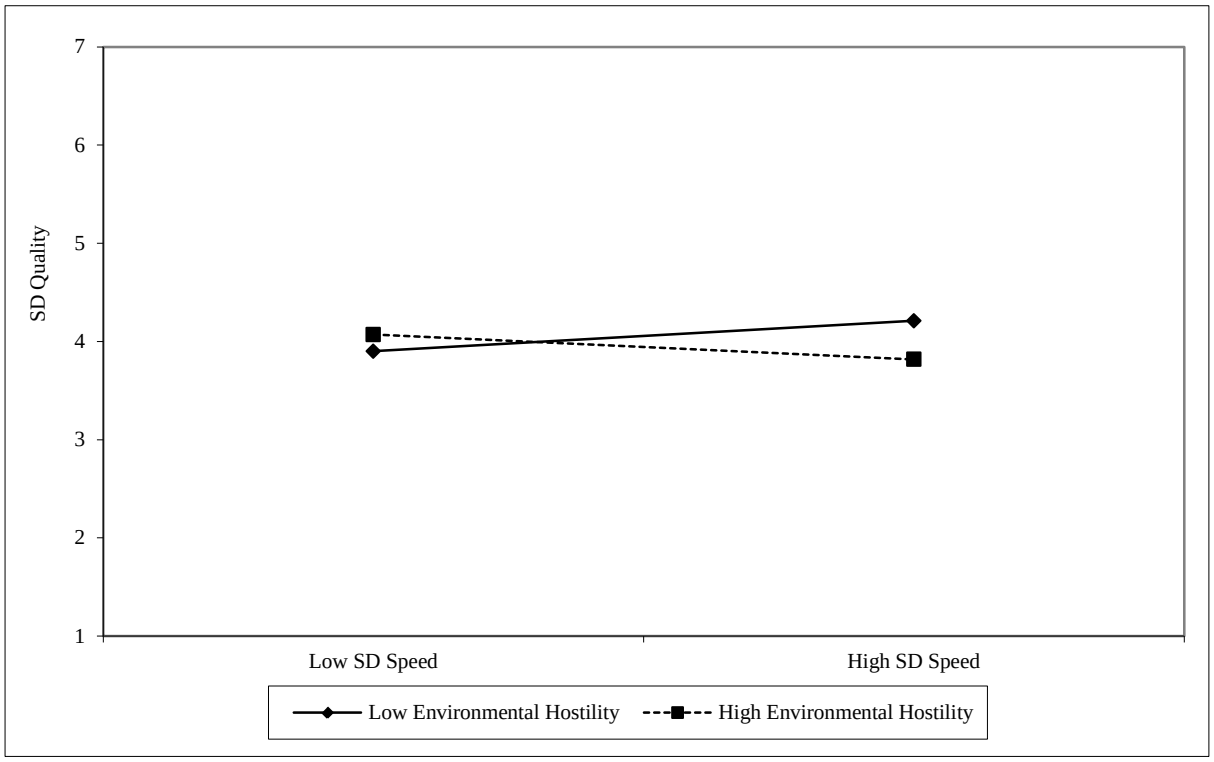
Table 8.2.3.4 presents the results of the moderated multiple regression analysis. The SD speed*environmental hostility-munificence interaction produced a statistically significant change in R^2 (0.006, β = -0.086, $p \leq 0.05$), whereas the interaction between SD speed and environmental dynamism did not (ΔR^2 = 0.000, β = -0.014, n.s.). Therefore, hypothesis 11.1 is not supported. However, the significant interaction between SD speed and environmental hostility-munificence lends support hypothesis 11.2.

Table 8.2.3.4 Moderated Regression: The Moderating Effects of the External Environment on the Relationship between SD Speed and SD Quality

Variables	Restricted Model (Model 1)	Interaction Effects (Model 2)	Interaction Effects (Model 3)
Control Variables:			
Implementation Success	0.838**	0.840**	0.813**
Commitment	0.048	0.049	0.066
Procedural Rationality	0.079	0.082	0.092
Behavioural Integration	-0.050	-0.051	-0.044
SD Uncertainty	0.000	0.002	0.002
SD Magnitude of Impact	-0.038	-0.039	-0.032
Independent Variables			
SD Speed	0.012	0.011	0.011
Environmental Dynamism	-0.002	-0.001	-0.006
Environmental Hostility-Munificence	-0.072	-0.072	-0.045
Interaction Terms			
SD Speed*Environmental Dynamism		-0.014	
SD Speed*Environmental Hostility-Munificence			-0.086*
R^2	0.757	0.757	0.763
Adjusted R^2	**0.743**	**0.742**	**0.748**
F	**55.068****	**49.298****	**50.987****
ΔR^2 from restricted model		**0.000**	**0.006**
ΔF		**0.118**	**4.219***

To probe the significant interaction between SD speed and environmental hostility-munificence further, the regression slopes were visually inspected using a graphical illustration, and a split-sample correlation analysis was conducted. Figure 8.2.3.4 shows that under conditions of low environmental hostility (i.e. high environmental munificence), SD speed has a more positive effect on SD quality, than compared to under conditions of high environmental hostility where increased SD speed diminishes SD quality.

Figure 8.2.3.4 Moderating Effects of Environmental Hostility-Munificence on the Relationship between SD Speed and SD Quality



Finally, the split sample correlation analysis identified that in the high environmental hostility sub-sample, SD speed was not significantly correlated to SD Quality (r = 0.069, n.s.). However, in the low environmental hostility (i.e. high environmental munificence) sub-sample SD speed was significantly and positively correlated with SD quality (r = 0.393, $p \leq 0.001$). Therefore, both the visual inspection of the regression slopes and split-sample correlation analysis lends support to hypothesis 11.2. Thus, hypothesis 11.2 is supported.

Having conducted all of the regression analyses, a series of tests were performed to determine if the regression models are influenced by a small number of cases and to assess their generalisability. The next section provides details of the results of these tests.

8.3 Assessing the Regression Models

Regression models must be assessed in order to determine: (i) if the model is influenced by a small number of cases, and (ii) whether the model can generalise to other samples (Field, 2013).

To determine whether the regression models are influenced by a small number of cases, they must be assessed for the presence of outliers and influential cases, and this is discussed in section 8.3.1. Also, for regression models to be generalisable outside of the sample they must be assessed for a number of different assumptions—these are discussed in section 8.3.2.

8.3.1 Diagnostics of Outliers and Influential Cases

Regression models can be biased by outliers, which are cases that differ considerably from the main trend of the data (Field, 2013), and by influential cases which are cases that "exert undue influence over the parameters of the model" (Field, 2013, p.306). This section contains a discussion concerning how the regression models were examined to determine whether they were influenced by outliers or influential cases.

Outliers differ substantially from the main trend in the data e.g. very high or low scores (Mooi and Sarstedt, 2011), and as such can significantly affect the estimates of the regression coefficients (Field, 2013). Outliers can be detected by assessing the residuals—which represent error in the model and are essentially the difference between the values of the outcome predicted by the model and values of the outcome observed in the sample (Field, 2013). Hence, if a regression model fits the data well, the residuals will all be small; conversely a poor fitting model will have large residuals. Therefore, standardised residuals (which are residuals converted to Z-scores, that is, they are converted so that they are distributed around a mean of zero and standard deviation of 1) are commonly used to identify

outliers. Tabachnick and Fidell (2013) suggest that outliers are likely to be cases with standardised residuals of +3.3 or -3.3.

Influential cases can be identified using Cook's distance, which measures the overall influence of a case on the model (Field, 2013). Cook and Weisberg (1982) suggest that values greater than 1 may be causes of concern.

The present study utilises both standardised residuals and Cook's distance to identify outliers and influential cases. Table 8.3.1 shows that three of the regression models—table 8.2.2.1 model 3 and table 8.2.3.1 (model 2 and 3) have standardised residuals lower than -3.3 or great than +3.3 *and* a Cook's distance of greater than 1. Hence, table 8.2.2.1 (model 3) must be treated with caution as it is apparent that cognitive diversity is having a major influence on commitment. Similarly, table 8.2.3.1 (model 2 and 3) must also be treated with caution because of the significant influence of implementation success on the models. Therefore further research is needed to determine the generalisability of these particular regression models. No other regression models had both a standardised residual below -3.3 or above +3.3 *and* a Cook's distance in excess of 1.

Table 8.3.1 Results of Assessment of Outliers, Influential Cases, Multicollinearity, and Independent Errors (Adapted from Elbanna, 2010).

Table Reference	Model Number	Diagnostics of Influential Cases				Multicollinearity Statistics		Independent Errors
		Standardised Residuals		Cook's Distance		Smallest Tolerance	Largest VIF	Durbin Watson Values
		Min	Max	Min	Max			
8.2.1.1	1	-2.255	1.781	0	1.192	0.706	1.416	1.896
	2	-2.231	2.001	0	0.162	0.706	1.416	2.069
	3	-2.669	2.662	0	0.117	0.706	1.416	1.984
	4	-1.969	2.640	0	0.447	0.706	1.416	2.056
	5	-2.220	2.342	0	1.749	0.706	1.416	1.802
8.2.1.2	1	-2.255	1.781	0	1.192	0.706	1.416	1.896
	2	-2.231	2.001	0	0.162	0.706	1.416	2.069
	3	-2.669	2.662	0	0.117	0.706	1.416	1.984
	4	-1.969	2.640	0	0.447	0.706	1.416	2.056
	5	-2.220	2.342	0	1.749	0.706	1.416	1.802
8.2.1.3	1	-2.255	1.781	0	1.192	0.706	1.416	1.896
	2	-2.231	2.001	0	0.162	0.706	1.416	2.069
	3	-2.669	2.662	0	0.117	0.706	1.416	1.984
	4	-1.969	2.640	0	0.447	0.706	1.416	2.056
	5	-2.220	2.342	0	1.749	0.706	1.416	1.802
8.2.1.4	1	-2.255	1.781	0	1.192	0.706	1.416	1.896
	2	-2.231	2.001	0	0.162	0.706	1.416	2.069
	3	-2.669	2.662	0	0.117	0.706	1.416	1.984
	4	-1.969	2.640	0	0.447	0.706	1.416	2.056
	5	-2.220	2.342	0	1.749	0.706	1.416	1.802
8.2.2.1	1	-3.208	2.608	0	0.260	0.354	2.821	2.041
	2	-3.652	2.365	0	0.085	0.354	2.821	1.973
	3	-4.166	2.151	0	1.114	0.354	2.821	1.982
	4	-3.198	2.475	0	0.820	0.354	2.821	2.458
8.2.2.2	1	-2.976	2.452	0	0.140	0.503	1.988	1.951
	2	-3.307	2.505	0	0.213	0.389	2.575	1.843
	3	-4.459	2.546	0	0.189	0.436	2.292	1.932
	4	-3.506	2.186	0	0.095	0.436	2.292	2.229
8.2.2.3	1	-2.566	3.681	0	0.304	0.342	2.923	1.964
	2	-2.901	2.489	0	0.165	0.354	2.822	2.056
	3	-3.193	2.575	0	0.228	0.346	2.891	2.055
8.2.3.1	1	-2.344	3.837	0	0.320	0.436	2.296	2.083
	2	-2.668	3.763	0	1.305	0.430	2.327	2.099
	3	-2.266	3.787	0	1.052	0.424	2.359	1.869
8.2.3.2	1	-2.487	3.806	0	0.227	0.438	2.284	1.803
	2	-2.474	3.642	0	0.314	0.435	2.300	1.827
	3	-2.510	3.697	0	0.436	0.438	2.285	1.843
8.2.3.3	1	-2.475	3.496	0	0.285	0.436	2.295	2.025
	2	-2.612	3.758	0	0.222	0.419	2.385	1.924
	3	-2.747	3.392	0	0.246	0.435	2.297	2.005
	4	-4.102	2.063	0	0.167	0.568	1.761	1.928
	5	-4.217	2.119	0	0.140	0.549	1.822	2.019
	6	-4.093	2.069	0	0.201	0.565	1.769	1.913
	7	-4.281	2.305	0	0.174	0.576	1.737	2.004
	8	-4.274	2.234	0	0.230	0.555	1.801	2.004
	9	-4.286	2.303	0	0.154	0.573	1.744	2.002
	10	-3.113	2.211	0	0.165	0.436	2.295	2.352
	11	-3.025	1.992	0	0.226	0.419	2.385	2.309
	12	-3.106	2.229	0	0.167	0.435	2.297	2.357
8.2.3.4	1	-2.356	3.812	0	0.254	0.438	2.285	2.115
	2	-2.332	3.753	0	0.268	0.434	2.306	2.110
	3	-2.373	3.461	0	0.276	0.420	2.382	2.078

8.3.2 Generalisation

To be able to generalise the findings outside of the sample, a number of assumptions must be met. These assumptions are discussed in turn below, and are derived from Field (2013).

1. Linearity—outcome variables should have a straight-line linear relationship with predictor variables. In the present study linearity was assessed by examining the residuals plots. The standardised residuals (*ZRESID) were compared to the standardised predicted values (*ZPRED) (Pallant, 2010; Tabachnick and Fidell, 2013). For each of the regression models there was no evidence of any curve in the graph of the residuals.

2. Independent errors—for any two observations the residual terms should be independent (i.e. uncorrelated). The Durbin-Watson test was used to test for this assumption. The test result can vary between zero and 4; a result of 2 means that the observations are uncorrelated, a value higher than 2 indicates a negative correlation, and a value lower than 2 indicates a positive correlation. Hence, values close to 2 are ideal. In the present study all Durbin-Watson values are between 1.802 and 2.457 (see table 8.3.1) indicating that there are no significant concerns surrounding the independence of errors.

3. Homoscedasticity—at each level of the predictor variables, the variance of the residuals should be constant (Field, 2013). Homoscedasticity was assessed using the residuals plots, and the standardised residuals (*ZRESID) were compared to the standardised predicted values (*ZPRED). A funnelling out of the plots on the graph indicates heteroscedasticity. Whilst the presence of homoscedasticity weakens the analysis, it does not invalidate it (Tabachnick and Fidell, 2013). In the present study the regression models did not indicate homoscedasticity.

4. Normally distributed errors—it is assumed that the residuals in the regression models are random, have a normal distribution, and a mean of 0. However, with larger sample sizes a lack of normality will not invalidate confidence intervals and significance tests, and it is a common misconception that predictor variables need to be normally distributed (Field, 2013). To assess the normality of the

residuals, the histogram of residuals and the normal probability plot were assessed (Tabachnick and Fidell, 2013). The histogram should take the form of a normal distribution, and the normal probability plot should take the form of a straight diagonal line. The residual line should closely follow the diagonal. In the present study there were minor deviations from the normal distribution in the histograms, and also minor departures from the diagonal in the normal probability plots.

5. Predictors are uncorrelated with external variables—external variables are variables not included in the regression model that influence the outcome variable (Field, 2013). In the present study, an integrative approach was adopted that includes 5 SDMP characteristics and all four categories of contextual variables. Hence, attempts were made to reduce the risk of external variables impacting on the generalisability of the findings. However, due to sample size constraints, it is simply not practical to include every SDMP characteristic or contextual variable which may influence the SDMP outcomes featured in the present study. Hence, a limitation of the present study is that there may be external variables not included in the regression models which influence the outcome variables.

6. Variable types—predictor variables must all be either quantitative or categorical, and the outcome variable must be quantitative, continuous, and unbounded (i.e. no constraints on the variability of the outcome). In the present study, all predictor variables were either quantitative or categorical and the outcome variables are all quantitative, continuous, and unbounded.

7. Multicollinearity—there should be no perfect linearity between two or more predictor variables. Two indicators of multicollinearity were used in the present study: variance inflation factor (VIF), and tolerance. Tolerance indicates how much of the variability of the specified independent variable is not explained by other independent variables. If the tolerance is less than 0.10, it indicates the possibility of multicollinearity (Pallant, 2010). VIF is the inverse of the tolerance value, and values greater than 10 indicate multicollinearity (Pallant, 2010). Furthermore, all variables were mean centred to minimise the risk of multicollinearity (Cohen et al. 2003). In the present study all tolerance values were above 0.10 and all VIF values were below 10 (see table 8.3.1).

8. Non-zero variance—the predictor variables should have variation (i.e. they must not have variances of zero). In the present study no predictor variables had zero variance.

9. Cross-validation—if a model can be generalised, then it must be capable of predicting the same outcome variable using the same predictor variables, in a different sample (Field, 2013). There are four means by which the validity of the regression models can be assessed. First, the adjusted R^2 can be computed, which provides detail of how much variance in Y would be accounted for if the model had been derived from the whole population (Field, 2013). Ideally the R^2 and adjusted R^2 are very similar. This approach was taken in the present study, and values for both R^2 and adjusted R^2 were compared for each regression model, and all were judged to be similar. Second, as recommended by Hair et al. (2008) the results of the present study are compared to existing validated results on the topic (see chapter 9). Third, the sample can be split and the regression models computed for both halves of the data (Field, 2013). However, sample size restrictions precluded this approach in the present study. Fourth, the regression models can be computed on a new sample. However, time and cost constraints precluded this approach in the present study. Therefore, bootstrapping was used as a post-hoc test to specifically address issues of cross-validation (see section 8.4.5).

Finally, because the sample comprised both services and manufacturing companies, the regression models were re-examined, including a dummy variables (1=manufacturing, 2=services) to determine if the results of the regression equations remained the same. For all regression models included within this chapter the results remained unchanged, with the exception of the multi-theoretic regression models (hypotheses 1-4) examining the influence of each of the different categories of contextual variables on SDMP comprehensiveness. The effects of each of the 13 contextual variables remained unchanged, except that the dummy variable representing industry type was significantly and negatively related to comprehensiveness (β -0.165, $p \leq 0.05$). Hence it appears that manufacturing companies are more inclined towards comprehensiveness than compared to services companies. To further probe this finding, a t-test was performed, and statistically significant differences ($p \leq 0.05$)

were found in the comprehensiveness of the manufacturing sample of companies compared to the services sample. This procedure was repeated for each of the other 4 SDMP characteristics but no significant differences were identified between the manufacturing and service samples.

8.4 Post-Hoc Robustness Tests

This section describes the results of a series of post-hoc tests that were conducted on the regression models in order to determine their robustness. These tests include: (i) the assessment of non-linear effects; (ii) Ramsey's test of specification errors (Ramsey, 1969); (iii) Schoonhoven's test for monotonicity (Schoonhoven, 1981); (iv) Seemingly unrelated regression (SUREG), and; (v) bootstrapping. The procedures and results of each of these tests are discussed briefly in turn in the following sections.

8.4.1 Non-Linear Effects

The results of moderated regression analysis can be influenced by non-linear effects of independent variables on the dependent variable (Ng and Feldman, 2012). Hence such non-linear effects can give rise to spurious interaction effects (Shepperd, 1991). Therefore to assess whether non-linear effects were influencing the results of the interactions in the regression models, the following procedure was performed: For each regression model where a significant interaction was detected, the regression analysis was repeated, however the squared terms of the predictor variables were included (i.e. the independent variable and the moderator variables), as an additional set of control variables. Having controlled for non-linear effects of the predictor variables, the interaction terms all remained statistically significant. Hence, these results suggest that the significant interaction effects reported in this chapter are not spurious.

8.4.2 Ramsey's Test of Specification Errors

Using STATA IC12 the regression models were all assessed for misspecification. Misspecification occurs if there is non-linearity amongst predictor variables that significantly influences the regression model. Ramsay's test was conducted for all of the regression models and in each case the F statistic was non-significant. Therefore, the regression models reported in this chapter are not misspecified.

8.4.3 Schoonhoven's Test for Monotonicity

Schoonhoven (1981) recommends assessing contingency relationships to determine whether a monotonic or non-monotonic pattern exists. Monotonic interactions cause the slope of the regression equation to change only within positive values or within negative values (Schoonhoven, 1981); whereas the regression slopes of non-monotonic interactions cross the horizontal axis i.e. depending on the level of the moderator variable—the nature of the relationship between the independent variable and dependent variable will alter from being negative to positive (or vice-versa). Monotonicity can be assessed by plotting the partial derivatives of the regression equation (following the approach of Wathne and Heide, 2004). In the present study, all of the significant interactions were monotonic i.e. the interaction only caused the regression slope to change within positive, or within negative values.

8.4.4 Seemingly Unrelated Regression

Seemingly unrelated regression assumes that the error terms in the regression equations are correlated (Zellner, 1962), whereas standard linear regression models assume that error terms are uncorrelated. Hence, seemingly unrelated regression offers a more efficient way of estimating a regression equation if the error terms are actually correlated. In the present study, the regression models were calculated using STATA IC12's seemingly unrelated regression function. For every regression model the

results, and statistical significance of the results, remained the same for seemingly unrelated regression as for the standard linear regression models reported in this chapter.

8.4.5 Bootstrapping

Bootstrapping was developed by Efron (1982) and is a nonparametric procedure for estimating parameters and standard errors (Cooil et al.1987). Bootstrapping therefore allows for regression equations to be replicated by drawing phantom samples from the data, but without the need to obtain new data from a different sample each time. Essentially, bootstrapping assesses the implications of relaxing the standard distributional assumptions of standard regression equations (i.e. normal distributions). In the present study bootstrapping was used for all significant regression equations, and 1,000 replications were performed using STATA IC12. In all cases the bootstrapped parameters and standard errors fell within the 90% confidence interval, which provides a degree of evidence concerning the predictive validity of the regression models (Nunnally, 1978).

8.5 Summary

This chapter has presented the results of the tests of the study hypotheses, and table 8.5 summarises these results. The results from the tests of the first group of hypotheses show that the TMT consistently predicts the largest amount of variance in the characteristics of the SDMP, although the other three perspectives—SD specific characteristics, the external environment, and firm characteristics all explain a large amount of variance in one or more of the SDMP characteristics.

The results of the second group of hypotheses show that procedural rationality and behavioural integration significantly influence SDMP outcomes, even controlling for the influence of context. Also, the results show that implementation success mediates the effects of SDMP characteristics and contextual variables on SD quality.

The results of the tests performed on third group of hypotheses show a significant three way interaction between intuition, SD familiarity, and TMT expertise which positively influences SD quality. Further interaction effects were detected for procedural rationality, intuition, and environmental hostility-munificence which significantly influence SD quality. Under conditions of environmental hostility procedural rationality has a more positive effect on SD quality, whereas under conditions of environmental munificence, intuition has a more positive effect on SD quality. TMT expertise and cognitive diversity were also found to moderate the effects of political behaviour on SD quality and implementation success—the results suggest that when expert TMTs engage in political SDMPs it can positively influence implementation success and overall SD quality. However, political SDs made by cognitively diverse TMTs appear to diminish overall SD quality. Finally, the relationship between SD speed and SD quality is influenced by environmental hostility-munificence—in hostile environments speedy SDs diminish the quality of an SD.

This chapter has also discussed and presented the results from a series of tests performed on the regression models in order to determine: (i) whether they are influenced by a small number of cases; (ii) whether the results are generalisable, and; (iii) the robustness of the models. Some of the regression models need to be treated with a degree of caution because they may be influenced by a small number of cases. However, the majority of tests for influential cases, generalisability, and robustness lend a strong degree of support for the results of the regression models.

In the next and final chapter (chapter 9) the results presented in this chapter are discussed and a number of findings and conclusions are stated. Chapter 9 also states the substantial and original contribution to SDMP knowledge that this thesis makes.

Table 8.5 Results of Hypothesis Testing

Hypothesis Number	Hypothesis	Results
First Group of Hypotheses: Multi-Theoretic Influences on SDMP Characteristics		
H1.	TMT variables will account for a significant amount of variance in SDMP characteristics, above and beyond the variance attributable to SD specific characteristics, the external environment, and firm characteristics.	Supported
H2.	SD specific characteristics will account for a significant amount of variance in SDMP characteristics, above and beyond the variance attributable to the TMT, the external environment, and firm characteristics.	Partially supported
H3.	External environmental variables will account for relatively less variance in SDMP characteristics, compared to the variance attributable to the TMT, SD specific characteristics, and firm characteristics.	Partially supported
H4.	Firm characteristics will account for a significant amount of variance in SDMP characteristics, above and beyond the variance attributable to the TMT, SD specific characteristics, and the external environment.	Partially supported
Second Group of Hypotheses: The Effects of SDMP Characteristics on SDMP Outcomes		
H5.	SDMP characteristics will explain a significant amount of variance in (A) SD quality, (B) implementation success, (C) commitment, and (D) SD speed, above and beyond the variance explained by the TMT, SD specific characteristics, the external environment, and firm characteristics.	Partially supported
H6.1.	Procedural rationality will be positively related to (A) SD quality, (B) implementation success, and (C) commitment.	Partially supported
H6.2.	Procedural rationality will be negatively related to SD speed.	Not supported
H6.3.	Comprehensiveness will be positively related to (A) SD quality, (B) implementation success, and (C) commitment.	Not supported
H6.4.	Comprehensiveness will be negatively related to SD speed.	Not supported
H6.5.	Behavioural integration will be positively related to (A) SD quality, (B) implementation success, (C) commitment, and (D) SD speed.	Supported
H6.6.	Intuition will be negatively related to (A) SD quality, (B) implementation success, and (C) commitment.	Not supported
H6.7	Intuition will be positively related to SD speed.	Not supported
H6.8.	Political behaviour will be negatively related to (A) SD quality, (B) implementation success, (C) commitment, and (D) SD speed.	Partially supported
H7.1.	Implementation success will mediate the effects of SDMP characteristics on SD quality.	Supported
H7.2.	Commitment will mediate the effects of SDMP characteristics on SD quality.	Not supported
H7.3.	SD speed will mediate the effects of SDMP characteristics on SD quality.	Not supported
Third Group of Hypotheses: The Moderating Effects of Contextual Variables on the Relationships Between SDMP Characteristics and Outcomes		
H8.	There is a three-way interaction between intuition, SD familiarity and TMT expertise, such that there will be a positive relationship between intuition and SD quality when the SD is familiar and the TMT have expertise.	Supported

Hypothesis Number	Hypothesis	Results
H9.1.	Environmental hostility-munificence moderates the negative relationship between intuition and SD quality, such that in high hostility environments the relationship is stronger.	Supported
H9.2.	Environmental hostility-munificence moderates the positive relationship between procedural rationality and SD quality, such that in high hostility environments the relationship is stronger.	Supported
H10.1.	TMT expertise moderates the negative relationship between political behaviour and SD quality, such that when the TMT have expertise the relationship is weaker.	Supported
H10.2.	TMT expertise moderates the negative relationship between political behaviour and implementation success, such that when the TMT have expertise the relationship is weaker.	Supported
H10.3.	TMT expertise moderates the negative relationship between political behaviour and commitment, such that when the TMT have expertise the relationship is weaker.	Not supported
H10.4.	TMT expertise moderates the negative relationship between political behaviour and SD speed, such that when the TMT have expertise, the negative relationship is weaker.	Not supported
H10.5.	TMT cognitive diversity moderates the negative relationship between political behaviour and SD quality, such that when the TMT are cognitively diverse the relationship is stronger.	Supported
H10.6.	TMT cognitive diversity moderates the negative relationship between political behaviour and implementation success, such that when the TMT are cognitively diverse the relationship is stronger.	Not supported
H10.7.	TMT cognitive diversity moderates the negative relationship between political behaviour and commitment, such that when the TMT are cognitively diverse the relationship is stronger.	Not supported
H10.8.	TMT cognitive diversity moderates the negative relationship between political behaviour and SD speed, such that when the TMT are cognitively diverse the relationship is stronger.	Not supported
H11.1.	Environmental dynamism moderates the positive relationship between SD speed and SD quality, such that when the environment is dynamic the relationship is stronger.	Not supported
H11.2.	Environmental hostility-munificence moderates the positive relationship between SD speed and SD quality, such that when the environment is hostile the relationship is weaker.	Supported

CHAPTER 9 – DISCUSSION AND CONCLUSIONS

9.1 Introduction

This chapter is the final chapter, and states the substantial and original contribution to knowledge that this thesis makes. The integrative SDMP model that this study develops and tests has enabled previously untested relationships to be examined. Hence, the present study provides new and valuable insights so as to achieve a more complete portrayal of the SDMP, and has also helped to resolve some of the inconsistencies of previous studies.

This chapter also highlights the conclusions and findings arising from the present study, which include the pre-dominance of the TMT for explaining variance in SDMP characteristics, and that intuition and political behaviour *can* positively influence SD quality and implementation success when they interact with certain contextual variables. This chapter also highlights how procedural rationality and comprehensiveness are two discrete constructs which are affected differently by contextual variables, and how these two constructs have very different implications for SDMP outcomes. Also discussed are previously untested relationships, such as interactions between SD speed and environmental hostility-munificence, as well as the mediating effects of implementation success on the relationships between SDMP characteristics, contextual variables, and SD quality. This chapter also discusses the different implications of procedural rationality and intuition for SD quality under conditions of environmental hostility-munificence.

As stated in chapter one, this study set out to answer six broad research questions: (1) Which theoretical perspectives out of the TMT, SD specific characteristics, the external environment, and firm characteristics have the most significant influence on the characteristics of the SDMP?; (2) What are the effects of the different SDMP characteristics on SDMP outcomes; not just SD quality, but also implementation success, commitment, and SD speed?; (3) Do implementation success, commitment,

and SD speed mediate the effects of context and SDMP characteristics on SD quality?; (4) What are the boundary conditions for intuition to significantly and positively influence SD quality?; (5) what are the moderating effects of the TMT on the relationships between political behaviour and SDMP outcomes? And; (6) what are the moderating effects of the external environment on the relationship between SD speed and SD quality?

To answer these research questions an extensive review of the SDMP literature and related domains of literature was conducted (chapters 2 and 3). An exploratory phase of qualitative research was undertaken, which together with the review of the literature, was used to formulate a series of testable hypotheses (chapter 4). In order to test the hypotheses, a quantitative survey-based research design was carefully planned and executed (chapters 5 to 7), and the hypotheses were subsequently tested in chapter 8. This chapter (chapter 9) therefore presents a discussion of the extent to which the six research questions have been answered.

This chapter is divided into six sections. Section 9.2 discusses the findings from each group of hypotheses, and in section 9.3 the substantial and original contribution to knowledge is stated. In section 9.4 the managerial implications of the present study are highlighted. Section 9.5 describes the limitations of the empirical work conducted in the present study, and section 9.6 outlines a series of directions for future research. Finally, section 9.7 presents an overall summary of this chapter.

9.2 Findings

This section discusses the findings arising from the hypotheses testing reported in chapter 8. Section 9.2.1 examines the findings from the first group of hypotheses concerning multi-theoretic influences on SDMP characteristics. Section 9.2.2 proceeds to address the findings arising from the second group of hypotheses relating to the effects of SDMP characteristics on SDMP outcomes. Finally,

section 9.2.3 provides a discussion concerning the third group of hypotheses, pertaining to the moderating effects of contextual variables on the relationship between SDMP characteristics and SDMP outcomes.

9.2.1 Findings: Multi-Theoretic Influences on SDMP Characteristics

The first group of hypotheses relate to multi-theoretic influences on SDMP characteristics (Hypotheses 1-4, see chapter 8, table 8.5). The findings lend overwhelming support to the upper echelons (Hambrick and Mason, 1984) or strategic choice perspective (Child, 1972), because the TMT variables explain the largest amount of variance in SDMP characteristics. However, it is also apparent that no one theoretical perspective alone is sufficient for explaining all of the SDMP characteristics because each of the TMT, SD specific characteristics, the external environment, and firm characteristics explain a significant amount of variance in one or more of the five SDMP characteristics. The results for hypotheses 1-4 are discussed below, in relation to each of the four theoretical perspectives:

1. **The TMT** variables, which represent the upper echelons or strategic choice perspective, consistently predict the largest amount of variance in SDMP characteristics, relative to other contextual influences. The TMT variables explain an additional 17.9% of the R^2 in procedural rationality ($p \leq 0.01$), 10.9% in comprehensiveness ($p \leq 0.01$), 24.3% in behavioural integration ($p \leq 0.01$), 4.4% in intuition ($p \leq 0.05$), and 5.5% in political behaviour ($p \leq 0.05$). These results are somewhat contradictory to those of Papadakis and Barwise (2002) who found that the TMT and CEO accounted for less variance in SDMP characteristics than compared to other contextual variables. Two possible explanations exist for this discrepancy; the first is due to differences in the size of the firms in the samples—the average number of employees for firms in the present study is 177, compared to 730 in Papadakis and Barwise (2002). In larger organisations the TMT may have a less

pervasive influence on the SDMP (Miller et al, 1988). Second, the present study utilises different TMT variables and does not use TMT demographic variables as proxies.

In particular, TMT expertise is a significant predictor of four out of the five SDMP characteristics. It is apparent that expert TMTs favour procedural rationality ($\beta = 0.355$, $p \leq 0.01$), comprehensiveness ($\beta = 0.244$, $p \leq 0.01$), and behavioural integration ($\beta = 0.336$, $p \leq 0.01$). However, expert TMTs appear to avoid intuitive SDMPs ($\beta = -0.178$, $p \leq 0.05$). Also, cognitive diversity amongst TMT members appears to have damaging consequences for procedural rationality ($\beta = -0.177$, $p \leq 0.05$), comprehensiveness ($\beta = -0.161$, $p \leq 0.05$), and behavioural integration ($\beta = -0.307$, $p \leq 0.01$); whilst promoting political behaviour ($\beta = 0.171$, $p \leq 0.05$). These results are consistent with those of Miller et al. (1998) who found that cognitive diversity negatively impacted on comprehensiveness, and with those of Olson et al. (2007a) who determined that cognitive diversity was positively related to task conflict. Finally, TMT power decentralisation was found to be a significant predictor only of political behaviour ($\beta = -0.157$, $p \leq 0.05$). Hence, when SDM power is centralised in the hands of the CEO or MD and not distributed amongst the TMT members a political process ensues. These findings offer large scale, generalisable empirical evidence which builds upon the inductive case studies of Bourgeois and Eisenhardt (1988), who proposed that centralisation of SDM power results in political processes.

2. Consistent with prior studies (e.g. Elbanna and Child, 2007b; Papadakis et al. 1998) **SD specific characteristics** also account for a large amount of variance in three out of the five SDMP characteristics. SD specific characteristics account for an additional 8.5% of the R^2 in procedural rationality ($p \leq 0.01$), 3.9% in behavioural integration ($p \leq 0.05$), and 8.1% in intuition ($p \leq 0.01$). SD specific characteristics did not account for a significant change in the R^2 of comprehensiveness or political behaviour. Hence, it appears as though the way in which decision-makers perceive an SD during its early stages significantly shapes the subsequent process by which it is made.

SD uncertainty is the most significant SD specific characteristic which influences SDMP characteristics. SD uncertainty diminishes procedural rationality (β = -0.213, $p \leq 0.01$) and behavioural integration (β = -0.168, $p \leq 0.05$) whilst promoting the reliance on intuition (β = 0.252, $p \leq 0.01$). SD familiarity also diminishes procedural rationality (β = -0.150, $p \leq 0.05$) but does not significantly affect any of the other SDMP characteristics. Furthermore, SD time pressure positively influences procedural rationality (β = 0.168, $p \leq 0.05$) which is somewhat contrary to expectation. However, the results suggest that when decision-makers are under time pressure, they resist the temptation to rush into a snap decision and instead focus on gathering and analysing relevant information. SD magnitude of impact did not significantly influence any of the SDMP characteristics, which is consistent with Dean and Sharfman (1993a)—who found that SD importance was not related to procedural rationality. However, the lack of significant effects of magnitude of impact are somewhat contradictory to those of Papadakis et al. (1998) whom found it to be a significant predictor of several SDMP characteristics including comprehensiveness. This discrepancy may be attributable to differences in the SDMP characteristics modelled, and also due to a high degree of measurement error in the magnitude of impact measure (see chapter 6).

3. The **external environment** does not appear to be a significant predictor of SDMP characteristics. Hence the present study makes a valuable contribution to the debate concerning whether managers are able to influence the performance of their organisations through the choices they make (Child, 1972; Hambrick and Mason, 1984) or whether organisational outcomes are determined primarily by the external environment. The results of the present study bring into question the veracity of the environmental determinism perspective (Aldrich 1979; Hannan and Freeman 1977), and these findings are broadly consistent with similar prior studies (e.g. Elbanna and Child, 2007b; Papadakis et al. 1998) who also found very limited direct effects of the external environment on SDMP characteristics relative to other contextual variables. In the present study, the external environment was only a significant predictor of comprehensiveness, and adding the variables pertaining to environmental dynamism and environmental hostility-munificence resulted in an increase in the R^2 of

4.2% ($p \leq 0.05$). Of this change, it appears that environmental hostility-munificence is largely responsible ($\beta = 0.170$), $p \leq 0.05$). Hence it appears as though when faced with hostile external environments decision-makers are likely to develop and evaluate more SD options and alternatives, perhaps because of the fear that one false move could result in the downfall of the organisation. Also, fewer opportunities are likely to exist in hostile environments and hence much more extensive search activities are required in order to identify favourable SD options.

4. Finally, **firm characteristics** appear to be a less significant influence on SDMP characteristics relative to the TMT and SD specific characteristics. Firm characteristics only explain a significant amount of change in the R^2 of political behaviour (6.2%, $p \leq 0.05$), and this variance is attributable to external control ($\beta = 0.220$, $p \leq 0.01$). Hence, when there is significant involvement from a third party e.g. a financial institution or parent company, a political SDMP ensues. Whilst there are no other empirical studies with which to compare this finding, it is feasible that the involvement of a third party may provoke resentment amongst members of the organisation's TMT and give rise to political behaviours such as coalition formation, and the distortion of information. The only other firm characteristic variable to significantly influence any of the SDMP characteristics is slack resources—which was positively related to procedural rationality ($\beta = 0.168$, $p \leq 0.05$). To an extent these results concur with those of Sharfman and Dean (1997a) who found that organisations with slack resources were open to new sources of information in the SDMP. Hence, from the results of the present study, it appears as though organisations with lower levels of financial gearing (the measure used to operationalise slack resources—see chapter 5) are more likely to gather and analyse information during the SDMP. However, it is unlikely that organisations would increase their levels of financial gearing to fund a more rational SDMP—and due to the absence of an explanatory theory the present study does not claim causality. Rather, it is arguably more likely that there is simply a correlation between slack resources and procedural rationality. Hence, whilst a low level of gearing (i.e. high level of slack resources) is unlikely to *cause* a procedurally rational SDMP, it may be the case that organisations with low levels of gearing are risk averse and therefore also tend to engage in

procedurally rational SDMPs. Similarly, it may be the case that organisations adopting procedurally rational SDMPs generate slack resources through optimal SDMPs.

Overall, the results demonstrate that all four theoretical perspectives (the TMT, SD specific-characteristics, the external environment, and firm characteristics) are important for explaining variance in SDMP characteristics, to varying degrees. However, it is also apparent that SD specific characteristics, and the TMT in particular, consistently explain the largest amount of variance in SDMP characteristics. Furthermore, TMT expertise is a particularly significant predictor of four out of the five SDMP characteristics (procedural rationality, comprehensiveness, behavioural integration, and intuition). The present study therefore makes a valuable contribution to the debate concerning the most significant contextual influences on SDMP characteristics by indicating that the TMT is the most influential theoretical perspective.

9.2.2 Findings regarding the Second Group of Hypotheses

The second group of hypotheses concern the effects of SDMP characteristics on SDMP outcomes (see chapter 8, table 8.5). Overall, the results lend support to the theoretical argument that decision process matters (Dean and Sharfman, 1996) and significantly determines the outcomes of the SDMP, even controlling for contextual variables from each of the four theoretical perspectives. The results show that SDMP characteristics explain a significant amount of the variance in the R^2, above and beyond the effects of contextual variables, of SD quality (8.8%, $p \leq 0.01$), implementation success (5.7%, $p \leq 0.01$), and SD speed (10%, $p \leq 0.01$). However, SD specific characteristics do not appear to significantly influence commitment to the SD—possibly because TMT cognitive diversity has such a strong and pervasive influence on commitment ($\beta = -0.405$, $p \leq 0.01$).

9.2.2.1 The Effects of SDMP Characteristics on SDMP Outcomes

Procedural rationality is a strong predictor of SD quality ($\beta = 0.250$, $p \leq 0.05$), which is consistent with the results of prior studies (e.g. Dean and Sharfman, 1996; Elbanna and Child, 2007a) that have established a positive relationship between rationality and SD effectiveness. Furthermore, procedural rationality in the SDMP also appears to result in implementation success ($\beta = 0.228$, $p \leq 0.05$). Behavioural integration is also a significant predictor of implementation success ($\beta = 0.189$, $p \leq 0.05$) and also of SD speed ($\beta = 0.271$, $p \leq 0.01$). Hence SDMPs characterised by procedural rationality and behavioural integration result in positive SDMP outcomes. This is the first empirical study to present strong evidence of a relationship between the process by which an SD is made, and the subsequent success of its implementation. Furthermore, this study is the first to demonstrate that behavioural integration—open information exchange, joint decision-making and collaborative behaviour—leads to greater SD speed. These findings are consistent with Eisenhardt's (1989) notion that smooth group processes lead to increased SD speed. An unexpected finding was that SDMP characteristics did not influence commitment; instead, TMT cognitive diversity appears to be the main determinant of commitment. Hence, if TMTs are cognitively diverse, regardless of the SDMP followed, the entire TMT is unlikely to be universally committed to the SD.

Of particular interest are the insignificant effects of comprehensiveness on SDMP outcomes, findings which are inconsistent with both the Eisenhardt studies which report positive effects of comprehensiveness on performance, and with the Fredrickson studies which report negative effects of comprehensiveness on performance. Notwithstanding differences in the research designs and operationalisation of variables, the results of the present study suggest that it is procedural rationality (gathering and analysing relevant information) which leads to positive SDMP outcomes, as opposed to comprehensiveness (developing and evaluating multiple decision options). As the first empirical study to simultaneously model both procedural rationality and comprehensiveness, the present study makes a significant contribution to the debate concerning the effects of synoptic formalism on SDMP

outcomes and provides insight into some of the inconsistencies arising from prior studies. It appears to be the case that the careful and systematic gathering and scrutiny of relevant information (procedural rationality) is of far greater importance to the success of the decision and its implementation than simply generating and evaluating multiple different SD options (comprehensiveness).

Finally, intuition and political behaviour do not appear to have significant direct effects on any of the SDMP outcomes, with the exception of a negative relationship between political behaviour and SD speed (β = -0.154, $p \leq 0.05$). Whilst the findings concerning intuition are consistent with Elbanna and Child (2007a), the findings concerning political behaviour are somewhat at odds with Dean and Sharfman (1996) and Elbanna and Child (2007a) whom both report significant and negative effects of political behaviour on SD effectiveness. The present study does however differ from both of these studies according to the industries and size of organisations sampled, and the present study also controls for a greater number of contextual influences (including the TMT), and models several SDMP outcomes. Also, the present study models five SDMP characteristics as opposed to Elbanna and Child's (2007a) three (procedural rationality, intuition, and political behaviour) and Dean and Sharfman's (1996) two (procedural rationality and political behaviour). Finally, the results of the third group of hypotheses show that the relationships between SDMP characteristics (and in particular intuition and political behaviour), and SDMP outcomes are complex, and subject to moderating effects of contextual variables.

9.2.2.2 Tests for Mediation

The present study establishes that implementation success mediates the relationships between SDMP characteristics and SD quality. This insight in particular may help to explain the inconsistent findings of prior studies of rationality/comprehensiveness (e.g. Eisenhardt, 1989; Fredrickson, 1984) and intuition (e.g. Elbanna et al. 2012; Khatri and Ng, 2000). The majority of prior studies in the SDMP

domain of literature have omitted implementation, and the present study indicates that a major consequence of certain SDMP characteristics e.g. procedural rationality and behavioural integration is that they facilitate the successful implementation of the SD, which in turn enhances its overall quality. However, neither commitment nor SD speed mediate the effects of SDMP characteristics on SD quality.

Overall, the results for the second group of hypotheses reaffirms that SDMP characteristics have significant implications for SDMP outcomes, however, the relationships may be more complex than prior studies have allowed for. Although the importance of implementation has been strongly argued in the SDMP literature (e.g. Elbanna, 2006; Elbanna and Child, 2007a) it is omitted from the majority of empirical works. The present study demonstrates empirically that implementation success is vitally important for the overall quality of the SD, and that implementation success is determined by procedural rationality and behavioural integration.

9.2.3 Findings regarding the Third Group of Hypotheses

The third and final group of hypotheses concern the moderating effects of contextual variables (see chapter 8, table 8.5). In section 9.2.3.1 the moderating effects of SD familiarity and TMT expertise on the relationship between intuition and SD quality is discussed. Section 9.2.3.2 concerns the moderating effects of environmental hostility-munificence on the relationships between procedural rationality, intuition, and SD quality. Section 9.2.3.3 discusses the moderating effects of the TMT on the relationships between political behaviour and SDMP outcomes. Finally, section 9.2.3.4 discusses the results of the hypotheses testing the moderating effects of the external environment on the relationship between SD speed and SD quality.

9.2.3.1 Intuition and SD Quality: The Moderating Effects of SD Familiarity and TMT Expertise

The significant and positive effect of the interaction between intuition, SD familiarity, and TMT expertise on SD quality represents one of the major findings of the present study, and is consistent with the arguments contained within the social-psychology literature regarding intuition (e.g. Kahneman and Klein, 2009). The intuition, SD familiarity, TMT expertise interaction ($\beta = 0.164$, $p \leq 0.01$) resulted in a significant change in the R^2 of SD quality of 1.3% ($p \leq 0.01$). Therefore, this demonstrates that when expert TMTs facing familiar SDs use their intuition in the SDMP, it positively influences SD quality.

These results may help to reconcile the discrepancy between the results of Khatri and Ng (2000) who found that intuition positively influenced performance in unstable environments, and Elbanna et al. (2012) who observed intuition resulting in unintended negative consequences for SDs. The inclusion of two key moderating variables—SD familiarity and TMT expertise—transforms the effects of intuition for SD quality from being non-significant (see chapter 8, table 8.2.3.1) to being significant and positive. This is likely to be because expert TMTs have complex domain relevant schemas, and when faced with a familiar SD they are able to rapidly detect and synthesise important cues and match them to patterns that are stored in their long term memory (Dane and Pratt, 2007; Hodgkinson et al, 2008). SD familiarity is the other vital component for intuition to positively influence SD quality because familiar SDs are more likely to have predictable causal and statistical structures, which enhance the likelihood of decision-makers (with expertise) being able to accurately detect cues, match those to the patterns stored in their schema, and consequently formulate an effective response (Sadler-Smith and Shefy, 2004). These findings also underscore the complex nature of interactions between process characteristics and context—demonstrating that three-way interactions exist. Neither the intuition*TMT expertise or intuition*SD familiarity interaction terms alone significantly influence SD quality. Rather it is the unique combination of intuition, as well as SD familiarity and TMT expertise that positively influences SD quality. Furthermore, these results are made all the more robust by the

inclusion of several control variables, and in particular implementation success, which significantly influences the overall quality of the SD.

Finally, these findings highlight the importance of context and in particular, the TMT and SD specific characteristics as influences on the SDMP. To the best of the author's knowledge the present study is the first to examine the moderating effects of TMT variables on the relationship between SDMP characteristics and outcomes. The results indicate that intuition can be used to enhance the overall quality of an SD, but only if the TMT have expertise in SDM and the SD is a familiar one.

9.2.3.2 Procedural Rationality, Intuition, and SD Quality: The Moderating Effects of Environmental Hostility-Munificence

The present study provides empirical evidence that environmental hostility strengthens the positive relationship between procedural rationality and SD quality ($\Delta R^2 = 1.8\%$, $p \leq 0.01$, $\beta = 0.136$, $p \leq 0.01$). However, under conditions of environmental hostility, intuition significantly and negatively affects SD quality ($\Delta R^2 = 0.6\%$, $p \leq 0.05$, $\beta = -0.81$, $p \leq 0.05$). Because environmental hostility-munificence is measured on a continuum, under conditions of environmental munificence—the opposite results hold true—and the positive effects of procedural rationality on SD quality are reduced, yet intuition positively affects SD quality. Therefore, these findings suggest that procedural rationality will enhance SD quality most strongly in hostile environments, whereas intuition will enhance SD quality most strongly in munificent environments.

Environmental hostility-munificence has received considerably less attention in the strategic management literature compared to other dimensions of the external environment (Elbanna, 2010) such as velocity, uncertainty, and dynamism. The present study therefore makes a valuable contribution to the debate concerning the moderating effects of environmental hostility-munificence.

In particular it lends support to the findings of Elbanna and Child (2007a), who found that environmental hostility strengthens the positive effects of procedural rationality on SD effectiveness, and contradicts to some extent the findings of Goll and Rasheed (2005) who found that rationality positively influences performance in munificent environments.

The findings provide empirical evidence that under conditions of environmental munificence, intuition is a vital sensing capability (Teece, 2007) that enables organisations to respond to the welter of opportunities presented to them, and to synthesise the vast quantities of information available in such environments (Hodgkinson and Healy, 2011). The use of intuition in such environments also permits the rapid response to opportunities, thus resulting in first mover advantages. However, the benefits of procedural rationality are diminished because the quantity of data pertaining to multiple opportunities will overwhelm decision-makers who attempt to gather and analyse all relevant information. Also, under conditions of environmental hostility, the opposite is true. Procedural rationality is vital to ensure all relevant information is carefully analysed because one false move could mean the company's downfall, and each opportunity must be fastidiously evaluated. Intuition is likely to be less reliable owing to the absence of learning opportunities required to develop expertise in environments where opportunities are so scarce.

By controlling for key variables, such as implementation success which are omitted in prior studies, the present study therefore provides robust empirical evidence concerning the moderating effects of environmental hostility-munificence on the relationships between procedural rationality, intuition, and SD quality.

9.2.3.3 Political Behaviour and SDMP Outcomes: The Moderating Effects of the TMT

The results of the present study provide fresh insights into the implications of political behaviour for SDMP outcomes. The results indicate that political SDMPs, if undertaken by expert TMTs can enhance the overall quality of the SD as well as facilitating its successful implementation. However, the results also indicate that when cognitively diverse TMTs engage in political SDMPs it is likely to diminish SD quality.

The extant SDMP literature has produced findings indicating that political behaviour negatively affects SDMP outcomes such as performance and SD effectiveness (Bourgeois and Eisenhardt, 1988; Dean and Sharfman, 1996; Elbanna and Child, 2007a). However, these studies have not taken into account the level of expertise of the decision-makers. As argued by Eisenhardt and Zbaracki (1992, p.26) "creating effective change and adaptation within organizations depends upon effective use of politics." Also, Child et al. (2010, p.122) outline the merits of political SDMPs: "In the preparation stage, politics can ensure that all sides of the decision are fully debated. Then, in the decision-making stage, politics can work as a kind of 'invisible underhand' to promote a necessary change blocked by the legitimate systems of influence. Lastly, in the execution stage, politics can ease the path for the implementation of a strategic decision." The results of the present study lend considerable support to these arguments, and political behaviour was found to not only lessen the negative effects of political behaviour on SD quality, but actually significantly and positively influence SD quality when it interacts with TMT expertise ($\Delta R^2 = 2.2\%$, $p \leq 0.01$, $\beta = 0.159$, $p \leq 0.01$). Similarly, when political behaviour interacts with TMT expertise it also positively influences implementation success ($\Delta R^2 = 1.6\%$, $p \leq 0.05$, $\beta = 0.135$, $p \leq 0.05$).

The results also show that political SDMPs carried out by cognitively diverse TMTs have damaging consequences for SD quality. The interaction between political behaviour and TMT cognitive diversity resulted in a change in the R^2 of 0.9% ($p \leq 0.05$) ($\beta = -0.101$, $p \leq 0.05$). Hence, it appears as

though the differences in beliefs and opinions which characterise cognitively diverse TMTs are not reconciled by a political SDMP, but rather, such differences are exacerbated and hostile conflict results. Whilst expert TMTs may utilise politics to tactfully lobby other decision-makers, cognitively diverse decision-makers may utilise politics for their individual benefit rather than for the good of the decision—and it is possible that TMT members may deliberately withhold information which may mean not all options are properly analysed, thus damaging overall SD quality.

There are no other studies with which to compare the results of the present study, owing to no previous studies examining the moderating effects of the TMT on the relationship between SDMP characteristics and SDMP outcomes. However, the findings of the present study are to a degree comparable to those of Olson et al (2007a) who found that task conflict was positively related to SD quality, commitment, and understanding. Similarly, Amason (1996) found that cognitive conflict (differences in opinion as to how best to achieve organisational goals) was positively related to SDMP outcomes (SD quality, understanding, and affective acceptance) whereas affective conflict (emotional and personal conflict) was negatively related to SDMP outcomes (SD quality and affective acceptance). Therefore a complex picture of political behaviour emerges, and the results of the present study show that more attention needs to be paid to moderating effects of context, and in particular the TMT, because simple bivariate relationships do not accurately portray the complexity of phenomena such as political SDMPs. As a minimum, the results of the present study challenge the notion that political SDMPs result in diminished SD quality and reduced implementation success.

It is also interesting to note that the interaction between political behaviour and cognitive diversity did not significantly affect implementation success and hence the implications of this interaction appear primarily to be for the formulation of the SD as opposed to its execution. Furthermore, interactions between political behaviour and TMT expertise and cognitive diversity did not significantly influence commitment or SD speed. Hence, expert TMTs seem able to utilise political behaviour to positively

influence the quality of the SD and the success of its implementation, but unable to use politics to enhance commitment or increase SD speed. Furthermore, the interactions between political behaviour and cognitive diversity do not significantly affect commitment or SD speed. Therefore, much more research is required in order to discern the moderating role of contextual variables on the relationships between SDMP characteristics and SDMP outcomes.

9.2.3.4 SD Speed and SD Quality: The Moderating Effects of the External Environment

The present study makes a significant contribution to the debate concerning the implications of SD speed under certain external environmental conditions. Extant research generally contends that in high velocity or dynamic environments, SD speed is positively related to performance (Baum and Wally, 2003; Eisenhardt, 1989; Judge and Miller, 1991). However, this line of enquiry has been at the organisational level, and has not been extended to consider how SD speed influences SD quality under conditions of environmental hostility (or munificence). Examining SD speed at a decisional level, as opposed to organisational level is warranted because organisational performance is subject to a vast array of extraneous influences, and a growing body of literature has demonstrated that organisations do not have consistent processes for SDM—rather they differ according to the individual SD being made (Elbanna and Child, 2007b; Hickson et al. 1986; Papadakis et al. 1998).

The present study provides empirical evidence indicating that in hostile environments, SD speed is significantly and negatively related to SD quality ($\Delta R^2 = 0.6\%$, $p \leq 0.05$, $\beta = -0.086$, $p \leq 0.05$). As discussed already, because environmental hostility and munificence are measured on a continuum—the opposite results hold true for environmental munificence—and in munificent environments SD speed is positively related to SD quality.

To the best of the author's knowledge the present study is the first to examine the moderating effects of environmental hostility-munificence on the relationship between SD speed and SD quality. The results demonstrate that under conditions of environmental hostility, hasty SDM can detrimentally affect the overall quality of the SD, whereas under conditions of environmental munificence SD speed can enhance SD quality. Whilst much more research is needed to replicate these findings, it is likely to be the case that SD speed enables first mover advantages to be seized, and because of the numerous opportunities present in munificent environments, TMTs making speedy SDs learn at a faster rate thus enhancing their ability to make high quality SDs. In contrast, in hostile environments TMTs have fewer opportunities for learning and SD speed may result in them neglecting to thoroughly analyse the limited opportunities that exist. Also, in hostile environments there will be limited opportunities to rectify ineffective SDs.

Contrary to expectation, SD speed is not related to SD quality in dynamic environments which is at odds with the findings of Eisenhardt (1989) and Judge and Miller (1991). There are however significant differences in the level of analysis, and variables used in the present study compared to Eisenhardt (1989) and Judge and Miller (1991)—both of these studies adopted an organisational level of analysis and examined environmental velocity and organisational performance. The results of the present study should be considered to be robust however, due to the inclusion of several control variables such as implementation success, that significantly impact on SD quality. The findings indicate that SD speed is not universally a positive phenomenon, and under conditions of environmental hostility, a slower pace of SDM may benefit overall SD quality. More research at the decision level, examining the effects of SD speed under conditions of environmental dynamism is required because of how susceptible organisational level outcomes such as performance are to extraneous factors.

9.3 Substantial Original Contribution to Knowledge

The substantial and original contributions to knowledge that this study makes to the SDMP domain of literature are discussed in turn below:

1. The present study shows that intuition and political behaviour can positively influence SD quality—and demonstrates empirically how context affects these relationships. Whilst a considerable body of conceptual literature has advocated the utility of intuition in the SDMP, empirical evidence is lacking and that which does exist has found insignificant, negative, or contradictory effects (e.g. Elbanna et al. 2012; Elbanna and Child, 2007a; Khatri and Ng, 2000). This study—by drawing upon insights from the social-psychology literature—provides empirical evidence showing that when the SD is familiar and the TMT have expertise, intuition can positively and significantly influence SD quality. Furthermore, extant research has largely found that political behaviour negatively impacts on SDMP outcomes (e.g. Dean and Sharfman, 1996; Elbanna and Child, 2007a). Contrary to this, the present study demonstrates that expert TMTs use politics constructively so as to positively influence SD quality and implementation success, whereas cognitively diverse TMTs damage SD quality if they engage in political SDMPs.

2. This study is the first to demonstrate empirically that the TMT has the most significant influence on SDMP characteristics above and beyond the effects of SD specific characteristics, the external environment, and firm characteristics. These findings lend strong support to the upper echelons (Hambrick and Mason, 1984) or strategic choice (Child, 1972) theoretical perspectives, whilst bringing into question the efficacy of the environmental determinism theoretical perspective (Aldrich 1979; Hannan and Freeman 1977).

3. Several previously unexplored relationships have been identified, which indicate that SDMP characteristics and contextual variables directly affect not just the overall quality of an SD but also implementation success, commitment, and SD speed. The results of the hypotheses testing also show that the effects of SDMP characteristics on SD quality are mediated by implementation success. Implementation has been long been recognised as being vitally important in SDMP research (Dean and Sharfman, 1996; Elbanna, 2006; Elbanna and Child, 2007a), but very little empirical work has been conducted (Papadakis et al. 2010). The results indicate that the process by which an SD is made has significant implications for whether it will be successfully implemented or not.

4. A further significant contribution is made through the development of a statistically robust measure of TMT expertise. Whilst an extensive literature exists concerning expertise in the social-psychology domain, little conceptual or empirical work has taken place in the SDMP literature. The present study has shown the importance of TMT expertise as a significant predictor of four out of the five SDMP characteristics, and also as a moderator of the relationships between intuition, political behaviour, and SD quality. Overall, the present study highlights the pervasive effects of the TMT as a contextual influence on the characteristics and outcomes of the SDMP.

5. The present study also highlights how behavioural integration is a vitally important SDMP characteristic which significantly and positively influences SD quality, implementation success, and SD speed. The present study has also revealed a number of significant contextual antecedents of behavioural integration, namely; SD uncertainty, TMT expertise, and TMT cognitive diversity. Alongside political behaviour and intuition, behavioural integration is a construct which complements procedural rationality and comprehensiveness (which focus solely on information processing), by capturing the complex social aspects of SDM.

6. The discriminant validity between procedural rationality and comprehensiveness has been established, and for the first time, their relative effects on SDMP outcomes have been compared in the same study. As well, the present study examines how contextual variables affect each of them differently. Procedural rationality and comprehensiveness have been used interchangeably in the SDMP literature, and comprehensiveness has been operationalised as a measure of rationality (e.g. Fredrickson, 1984; Fredrickson and Mitchell, 1984). The present study shows that statistically, they are two discreet constructs. Procedural rationality and comprehensiveness do not affect SDMP outcomes in the same way, and they are each affected differently by contextual variables. It should be noted however, that because of the high correlation between procedural rationality, comprehensiveness, and intuition, it is possible that multicollinearity is the reason for the insignificant effects of comprehensiveness on SDMP outcomes. This is discussed further as a limitation of the present study in section 9.5.7 of this chapter.

7. By addressing the black box criticism, which posits that the use of demographic proxy variables leaves many concepts and hypotheses untested (Lawrence, 1997); a further significant contribution to knowledge in the SDMP domain of literature is made. Direct psychometric measures of TMT variables are utilised; as opposed to using demographic proxy variables which have been cited as lacking construct validity and explanatory capability (Priem et al. 1999). Also, the present study builds upon the work of Miller et al. (1998) and provides empirical evidence showing that TMT cognitive diversity significantly affects procedural rationality, comprehensiveness, behavioural integration, and political behaviour in the SDMP.

In summary, the present study makes a significant contribution to knowledge by empirically examining an integrative model which enhances our knowledge of the antecedents and outcomes of the SDMP. The next section of this chapter discusses the managerial implications of the empirical findings.

9.4 Managerial Implications

Strategy research should identify important relationships which are not obvious to practitioners (Bateman and Zeithaml, 1989). Due to the complex and comprehensive nature of the relationships examined in the present study, several important implications have arisen which can help TMTs to improve the quality of the SDs that they make. These implications are discussed below, and are divided into four broad sections: the importance of decision process, intuition and political behaviour in the SDMP, the importance of the TMT, and the importance of context.

9.4.1 The Importance of Decision Process

Decision process matters (Dean and Sharfman, 1996). The present study builds on the findings of Dean and Sharfman (1996) and Elbanna and Child (2007a) by providing large scale, robust, generalisable empirical evidence, which demonstrates that the process by which SDs are made not only determines their overall quality, but also the likelihood of successful implementation and SD speed. The implication for management therefore, is that they should deliberately plan and engage in certain decision-processes to maximise the likelihood of attaining successful outcomes. Management should endeavour to collect and analyse as much relevant information (procedural rationality) as possible prior to committing to an SD. Furthermore, decision-makers should endeavour to openly exchange information and ideas, collaborate, and make decisions jointly (behavioural integration). A major challenge for TMTs therefore is to ensure that the necessary resources (both time and financial) are available and that decision-makers possess the requisite skills to conduct sufficiently detailed and rigorous analysis of information relevant to the SD. TMTs must also ensure they are sufficiently behaviourally integrated and socially cohesive.

Whilst certain decision processes evidently matter, a major managerial implication of the present study is that some decision processes—such as comprehensiveness—have little impact on the overall success of an SD. Whilst procedurally rational SDMPs positively influence SDMP outcomes,

comprehensiveness does not. Hence, TMTs are advised to allocate significant time and resources to gathering and analysing information relevant to the SD. However, the process of simply developing and considering multiple different decision options will not significantly influence the quality of the SD. Rather, TMTs have to go beyond simply generating and evaluating options and extensively look for information, analyse it, use techniques such as feasibility studies and consultants, and focus only on the most relevant information when making SDs.

9.4.2 Intuition and Political Behaviour in the SDMP

Another managerial implication is that intuition plays a significant role in the SDMP—however; TMTs should exercise caution regarding the extent to which reliance is placed on intuitive judgments when formulating SDs. The findings of the present study show that only when the TMT have expertise and the SD is familiar, can intuition be relied upon to produce high quality SDs. Similarly, the findings strongly challenge the conventional notion that political behaviour detrimentally affects SD quality. If conducted by expert TMTs, political behaviour can actually enhance SD quality and the success of implementation.

9.4.3 The Importance of the TMT

Another managerial implication is that the TMT themselves—in terms of their expertise, cognitive diversity, and extent of power decentralisation are the single most significant influence on the process by which SDs are made. Whilst other contextual variables do significantly influence the SDMP, the overwhelmingly most significant determinant of process is the TMT themselves. This implies that if TMTs have the requisite level of expertise, and there is consensus on the strategic goals and priorities of the organisation amongst the TMT; then rational and behaviourally integrated SDMPs will follow, thus maximising the likelihood of successful SDMP outcomes.

A further managerial implication pertaining to the TMT is that whilst they significantly and directly impact on the characteristics of the SDMP, they also play a key contingency role and can transform the effects of SDMP characteristics on SDMP outcomes. Specifically, even if the SDMP is characterised by political behaviour, expert TMTs can channel this positively to enhance the overall quality of the SD and the success of its implementation. Conversely, political behaviour has significant and negative implications for SD quality if conducted by cognitively diverse TMTs. This highlights the need for TMTs to achieve consensus concerning the organisation's strategic goals and priorities prior to commencing an SDMP, because cognitive diversity also diminishes procedural rationality and behavioural integration as well as commitment to the SD.

One of the key managerial implications of the present study is the importance of TMT expertise—both in terms of shaping the process by which SDs are made, and also for managing political and intuitive processes so that they positively influence SDMP outcomes. Hence, TMTs must ensure that they develop their expertise through: (i) extensive experience—a minimum of 10 years (Ericsson et al. 2007); (ii) deliberate practice, and; (iii) receiving precise and timely feedback. Executive education may have an important role to play in assisting TMTs to develop their expertise—especially pertinent may be the case study method taught by many business schools. Such methods are particularly useful for providing a form of deliberate practice—using case studies executives can formulate SDs in real life organisations, and because the outcomes of the case are known, they can receive detailed feedback on their actions (Ericsson et al. 2007). TMTs must also ensure that they monitor the SDs that they implement, and take time to evaluate the factors contributing to the success, or otherwise, of prior SDs so that they can learn from them.

9.4.4 The Importance of Context

TMTs must be aware of context—and be mindful that certain contextual factors (e.g. if the SD is inherently uncertain) can influence the process by which the SD is made. Furthermore, TMTs should

be aware that because of context; certain SDMPs will not necessarily guarantee successful outcomes. For instance, using rational processes—gathering and analysing relevant information—will be of greater benefit in hostile environments than compared to munificent environments. Similarly, whilst making fast SDs is likely to enhance the overall quality of an SD in munificent environments, it may damage SD quality in hostile environments.

9.5 Limitations

Every effort was made to ensure that the present study was as rigorous and robust as possible. The study was designed in order to address several significant gaps in the literature and to provide meaningful and important insights for managers. Despite this, the present study has limitations, relating to unavoidable trade-off decisions made during the research design phase, and because of inherent limitations associated with research methods in the social sciences. The limitations of the present study include: (i) a cross-sectional design; (ii) perceptual measures; (iii) survey-based methodology; (iv) operationalisations of the study variables; (v) the effects of individual contextual variables, (vi) sample size, and' (vii) multicollinearity. These are now each discussed in turn.

9.5.1 Cross-Sectional Design

The time-frame in which a UK PhD must be completed (3 years, with approximately 12-18 months for data collection) precluded the adoption of a longitudinal research design. However, such a design would have enabled the establishment of causality (Bowman et al. 2002). Furthermore, longitudinal designs enable SDMP researchers to establish the precise objectives for the SD at the time it is formulated, thereby allowing the researcher to establish at a later point the extent to which these objectives have been achieved (Dean and Sharfman, 1996) thus providing an objective measure of decision effectiveness. This reduces the potential for a biased response, because a decision-maker's intentions for the SD may change once they are aware of the outcomes (Elbanna, 2010; March and Simon, 1958). Therefore a limitation of the present study is that data concerning the characteristics of

the SDMP and the outcomes were collected at the same point in time, which severely restricts the ability to imply causality. This is however a common limitation with SDMP survey-based research (e.g. Brouthers et al. 2000; Goll and Rasheed, 1997; 2005; Khatri and Ng, 2000; Elbanna and Child, 2007a; 2007b; Elbanna et al. 2012). Furthermore, common method bias is unlikely to be a major concern in the present study because (i) of the results of Harman's one factor test (Podsakoff and Organ, 1986) (see chapter 6); (ii) in multivariate linear relationships, common method bias decreases when additional independent variables are included in a regression equation (Siemsen et al. 2010), and; (iii) interaction effects are never artefacts of common method bias—rather, common method bias diminishes the effects of interaction terms (Siemsen et al. 2010).

9.5.2 The use of Perceptual Measures

Perceptual measures may not always reflect the phenomenon of interest (Elbanna, 2010). It may also be the case that because of social desirability bias, informants have down-played, or in fact not reported, unsuccessful SDMP outcomes and SDMP characteristics such as political behaviour and intuition. However, to mitigate concerns over using perceptual measures, the following steps were taken:

1. At the start of the survey instrument, informants were explicitly asked to "please describe exactly what happened during the making of the decision; not what you feel is the right answer or you believe should have happened." Informants were also given repeated assurances regarding anonymity and of the purpose of the research to encourage them to provide an honest account of the SD;
2. Objective, secondary data was utilised for all of the firm characteristics measures, and;
3. Responses were collected from two informants per organisation for 69% of the sample.

9.5.3 Survey-Based Methodology

The use of a survey-based methodology does not allow researchers to provide the rich insights associated with other methods, such as case-studies (Elbanna, 2010). Certainly, techniques such as critical incident technique (CIT) and critical task analysis (CTA) used in other domains of decision-making research would have enabled the uncovering of contextual factors that contribute to successful and unsuccessful SDMPs (Hodgkinson and Sadler-Smith, 2011). However, because of the explicit calls in the SDMP literature for large samples and multivariate analysis (Papadakis and Barwise, 1997c; Papadakis et al. 1998) in order to improve the generalisability of SDMP research, the present study adopted a survey-based methodology.

9.5.4 Operationalisation of Variables

Several of the study variables (e.g. procedural rationality, comprehensiveness) are relatively simple operationalisations of very complicated phenomena, and much more complex operationalisations of SDMP characteristics do exist in the SDMP literature (e.g. Hickson et al. 1986; Fredrickson, 1984). However, all of the study measures (except the newly developed TMT expertise scale) are existing measures which have established acceptable levels of validity and reliability, as reported in international peer reviewed journals graded as 4 or 4* in the 2010 Association of Business Schools journal rankings guide. Furthermore, parsimony was of paramount importance given the length of the survey instrument and the demands that it placed on informants, and this necessitated the inclusion of measures with fewer items.

9.5.5 Effects of Individual Contextual Variables

Specific hypotheses were not developed and tested to examine the direct effects of each of the 13 contextual variables on each of the five SDMP characteristics. Similarly hypotheses were not developed to examine the moderating effects of all of the contextual variables on each of the

relationships between the five SDMP characteristics and four SDMP outcomes. One of the key research questions, derived from an extensive and exhaustive review of the SDMP literature was to establish which theoretical perspectives out of the TMT, SD specific characteristics, the external environment, and firm characteristics have the most significant influence on SDMP characteristics. Specific calls in the SDMP literature have been made for this type of research (e.g. Elbanna and Child, 2007b; Schwenk, 1995; Shepherd and Rudd, forthcoming).

Whilst examining the individual and moderating effects of each of the 13 contextual variables on each of the 5 SDMP characteristics would have undoubtedly yielded interesting and potentially important findings this would have resulted in excess of an additional 260 hypotheses to develop and test. Hence moderating effects were only examined where there was a clear and compelling theoretical rationale to do so which were based on the literature review, and exploratory phase of qualitative research.

The inclusion of 13 contextual variables, 5 SDMP characteristics, and 4 SDMP outcomes may be considered to be a strength of the present study, because it has permitted the testing of several previously unexplored relationships and the clarification of some areas of dissensus in the literature. However, the complexity of the conceptual model may also be considered to be a weakness owing to a loss of focus. Several relationships remain untested because of the sheer number of hypotheses required to test every conceivable relationship.

9.5.6 Sample Size

The regression models used to test hypothesis 5 (concerning the effects of SDMP characteristics and contextual variables on SDMP outcomes) must be treated with a degree of caution. This is because the sample size of 169 cases is below the minimum sample size of 194 cases advocated by Green

(1991) for assessing a regression model overall, with 18 predictor variables. The results are still presented within this thesis because of the importance of the findings for SDMP theory, and because the sample size of the present study is still relatively large compared to the sample sizes of existing studies (e.g. Bourgeois and Eisenhardt, 1988; Eisenhardt, 1989; Dean and Sharfman, 1993a; 1996; Papadakis et al. 1998). However, the results of the tests of hypothesis 5 must be treated with caution and considered to be exploratory.

9.5.7 Multicollinearity

The correlations between procedural rationality and comprehensiveness, between procedural rationality and intuition, and between comprehensiveness and intuition are 0.626 ($p \leq 0.01$), -0.617 ($p \leq 0.01$), and -0.469 ($p \leq 0.01$) respectively. Whilst these correlations are below the threshold of 0.7 at which point one of the independent variables should be omitted (Pallant, 2010), these correlations are still very high and may give rise to multicollinearity in the regression models that incorporate all of these independent variables. Whilst a degree of reassurance can be found in the fact that none of the regression models incorporating all of these independent variables have VIF values greater than 10 or tolerance values below 0.10 (Pallant, 2010); it may be the case that multicollinearity is present in these regression models owing to the high correlations between these variables.

9.6 Directions for Future Research

In addition to the substantial and original contribution to knowledge in the SDMP domain of literature that this thesis makes, a number of interesting and important opportunities for future research have been identified. This section of the chapter will discuss these opportunities, which relate to: theoretical issues (9.6.1 context, 9.6.2 firm capabilities, 9.6.3 rationality and comprehensiveness) and methodological issues (9.6.4 replication, 9.6.5 the SD as the unit of analysis, 9.6.6 measurement, 9.6.7

qualitative research designs, 9.6.8 longitudinal research designs). Each of these are discussed in turn below.

9.6.1 Context

The present study has re-affirmed the importance of context in shaping the characteristics and outcomes of the SDMP. However, whilst the present study set out to determine the overall effect of each of the four theoretical perspectives on the characteristics of the SDMP; future research could examine the effects of individual contextual variables on SDMP characteristics. This would provide even greater insight into why certain SDMPs are followed and others are not. Furthermore, the present study has highlighted the complex nature of the interactions between SDMP characteristics and context which determine SDMP outcomes. Future research could consider the possibility of three-way interactions, such as the interaction between intuition, SD familiarity, and TMT expertise shown to be highly significant in the present study. Whilst the present study attempted to be comprehensive in the number of contextual variables that were included, it was simply impractical to include every contextual variable. Hence there remain many potentially important contextual influences on the SDMP which the present study has not investigated, such as TMT trust, TMT potency, perceived risk, and strategic flexibility.

9.6.2 Firm Capabilities

Despite a growing body of literature advocating the importance of firm capabilities for successful strategic adaptation (e.g. Eisenhardt and Martin, 2000; Teece et al. 1997; Teece, 2007), and explicit calls in the SDMP literature for a focus on firm capabilities (e.g. Eisenhardt 1989; Molloy and Schwenk 1995); empirical research is scant. It may be the case that the ability to successfully implement SD options generated by SDMP characteristics such as comprehensiveness rests upon the strategic flexibility of the firm. Without the financial, operational, technological, and structural flexibility (Rudd et al. 2008) required to successfully implement SDs; they are unlikely to achieve

their intended objectives. Optimal SD options may be discarded because of an inability to implement them. Furthermore, the ability to make rational SDs rapidly may depend on the information systems and technologies of the organisation (Eisenhardt, 1989).

9.6.3 Rationality and Comprehensiveness

The present study has established the discriminant validity between procedural rationality and comprehensiveness. Future research should therefore keep these constructs separate and avoid using the two terms interchangeably, or defining comprehensiveness as a dimension of rationality. The empirical evidence presented in this thesis clearly demonstrates that not only do they achieve sufficient discriminant validity (Farrell, 2010), yet they are each affected by different contextual variables, and whilst procedural rationality has significant and positive implications for implementation success and SD quality; comprehensiveness does not. As previously stated, owing to significant correlations between procedural rationality, comprehensiveness, and intuition, multicollinearity may be a factor in explaining the insignificant effects of comprehensiveness on SDMP outcomes. However, future research should clearly specify the theoretical rationale for including one or the other in any one given study. It is however acknowledged that many different operationalisations of these two constructs exist; and using different measures of these two constructs may have produced different results.

9.6.4 Replication

In the SDMP domain of literature there is a need for empirical work that replicates and extends existing studies (Elbanna, 2010) because an incremental approach to theory development has hindered the development of a coherent body of knowledge. Many studies do not control for variables that have previously been shown to be highly significant (e.g. implementation), and greater attention to control variables would allow for implicit replication. Future research should therefore seek to

replicate the findings of the present study, or at least control for the relationships shown to be significant.

Future research could focus on specific industries or industry sectors, or focus on certain types of SDs. Also, the same hypotheses could be tested on larger organisations, where the effects of the TMT may be less pronounced. Given the significance of the TMT expertise measure as both a predictor of SDMP characteristics and as a moderator, future research should include this construct, which would also enable the further assessment of its validity and reliability.

9.6.5 The Strategic Decision as the Unit of Analysis

The present study is now the fourth empirical study to demonstrate that SDMP characteristics are significantly influenced by SD specific characteristics (Elbanna and Child, 2007b; Hickson et al. 1986; Papadakis et al. 1998). This body of evidence indicates that organisations do not have consistent processes for making SDs—rather SDMPs vary from one SD to the next. Future research should therefore adopt individual SDs as the unit of analysis. Consistency in the level of analysis adopted would also enable greater comparability of findings and allow a more coherent body of research to develop. There are also a number of other important and as yet infrequently studied SDMP (decision level) outcomes such as creativity, adaptation, innovation, and understanding (Ford and Gioia, 2000; Papadakis and Barwise, 1997c; Sharfman and Dean 1997a; Olson et al. 2007a). Examining how SDMP characteristics and context affects each of these outcomes would make a significant contribution to knowledge in the SDMP domain of literature.

9.6.6 Measurement

Whilst every effort was made to ensure that the measures operationalised in the present study were as valid and reliable as possible, some of the measures still suffered from less than desirable AVEs and reliabilities (e.g. political behaviour, magnitude of impact). Low AVEs and reliabilities indicate high

levels of random and measurement error, which makes detecting significant relationships less likely (Bagozzi, 1994). The time and resource constraints of a PhD programme of study precluded extensive measure development work in the present study. However, a programme of research aimed at improving the reliability and validity of SDMP characteristics, outcomes, and contextual variables would enhance confidence in the results from studies using them.

9.6.7 Qualitative Research Designs

Whilst there is a need for research utilising large samples and multivariate analysis in order to improve the generalisability of SDMP research (Papadakis and Barwise, 1997c), there is also the need for qualitative research designs. SDMP researchers could adopt methods commonly used by scholars in other domains—particularly cognitive task analysis (CTA) and critical incident technique (CIT)—to probe incidents and uncover contextual influences on the SDMP. For example, techniques such as CIT and CTA can lead to a better understanding of the contextual variables that contribute to "intuitive hits and misses" (Hodgkinson and Sadler-Smith 2011, p. 60). Given that there is relatively little empirical research examining intuition in the SDMP (Elbanna, 2006); qualitative studies are likely to provide vital insights which can inform large sample quantitative research designs. Similarly, multi-method field studies could be used (Snow and Thomas, 1994) that combine qualitative and quantitative research designs.

9.6.8 Longitudinal designs

The majority of SDMP research is cross-sectional, largely because of the significant, inherent difficulty in conducting longitudinal studies. However, in order to be able to claim causality between SDMP characteristics and outcomes, more research similar to that of Dean and Sharfman (1996) is necessary.

9.7 Summary

This chapter has summarised the substantial and original contribution to knowledge in the SDMP domain of literature that the present study makes. As well, this chapter has discussed the findings, managerial implications, limitations, and directions for future research that have arisen from the present study.

Building on a comprehensive review of the literature, including the social-psychology and organisational behaviour domains of literature; the present study has utilised a multi-method field study approach (Snow and Thomas, 1994). This comprised an exploratory qualitative phase of research, and a quantitative survey-based field study. The study has answered the following research questions, which were all identified as being vitally important in order to build theory in the SDMP domain of literature:

(1) Which theoretical perspectives out of the TMT, SD specific characteristics, the external environment, and firm characteristics have the most significant influence on the characteristics of the SDMP?;

(2) What are the effects of the different SDMP characteristics on SDMP outcomes; not just SD quality, but also implementation success, commitment, and SD speed?;

(3) Do implementation success, commitment, and SD speed mediate the effects of context and SDMP characteristics on SD quality?;

(4) What are the boundary conditions for intuition to significantly and positively influence SD quality?;

(5) What are the moderating effects of the TMT on the relationships between political behaviour and SDMP outcomes? And;

(6) What are the moderating effects of the external environment on the relationship between SD speed and SD quality?

The present study has significantly enhanced our understanding of the SDMP by clarifying some of the important relationships between context, SDMP characteristics, and SDMP outcomes. It is hoped that the present study can provide a platform for future research to replicate and extend the findings reported in this thesis.

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APPENDICES

APPENDIX 1: THINK ALOUD PROTOCOL INTERVIEW COMMENTS

APPENDIX 1. Summary of Think Aloud Protocol Interview Comments

		Summary of Think Aloud Protocol Comments	**Example Quotes**
Overall	General format and design	Comments concerning the format and design of the questionnaire were generally positive, however respondents commented on the need for more structure throughout the questionnaire and to be clearer about the purpose of each section.	"Thought it is very well constructed" "It's a good questionnaire" "I'm a bit lost going from section to section. Start each new section on a new page and have a brief explanation about the purpose of the section at the start of each new section" "Maybe put some easy questions at the start of the questionnaire to ease the respondent into it – make them feel at ease?"
	Length	Generally the respondents considered that the questionnaire was too long and advocated that it should be shortened. A number of respondents highlighted the importance of pre-notification to improve response rates	"I do think it's long and that you need some prior engagement (with the respondents)" "It's very intense" "It is quite long and detailed" "You're going to need to somehow get people to agree to do this up front"
	Engagement with the questionnaire	All respondents engaged with the questionnaire, and several commented that they found the questionnaire and the study as a whole to be interesting and relevant	"The questions are quite good actually – they are thought provoking"
	Other	Several respondents commented on the need to give assurances concerning the confidentiality of the information provided	"Try to be a little more sensitive to the confidential nature of what you're asking for" "Make the fact that this

			is confidential much clearer—put it as the first point"
Construct Specific	Strategic Decision Effectiveness	Three of the respondents commented that they would be unhappy to provide such confidential information, and one respondent commented that it would be problematic to remember precisely what the specific objectives for the decision were. Two respondents commented that it would be very time consuming to weight and evaluate each of the objectives.	"This would be a pain to complete...I'd bin it and give up" "This is pretty commercially sensitive detail you're requesting" "I'm not sure I could answer this, I don't know if we set objectives as such for the last big decision we took"
	Rationality	Two respondents queried item number 3 in the rationality measure, and questioned whether attending training courses would actually be used in the SDMP	"What do you mean attending a training course—like what sort of course?" "I don't think we would ever go on a training course to help us with a strategic decision, I'm not clear on this...maybe I don't quite follow this question"
	SD Familiarity	Two respondents queried the third item relating to whether the SD set parameters for future SDs	"What do you mean by set parameters?" "Set parameters for subsequent decisions—I don't really understand that"
	SD Time Pressure	One respondent queried the wording of the first time pressure item	"New time pressure, what is new time pressure?"

APPENDIX 2: INTRODUCTORY LETTER SENT TO PROSPECTIVE PARTICIPANTS

DATE

NAME
ADDRESS 1
ADDRESS 2
ADDRESS 3
ADDRESS 4
ADDRESS 5
ADDRESS 6
ADDRESS 7

Strategic Decision-Making in the 21st Century

Dear X,

I am writing to ask whether you would be willing to participate in my PhD research. The research is an important study of how companies make strategic decisions, against the backdrop of particular trading conditions. Your help with this research is integral to the completion of my studies, and it is hoped that the findings of the research can ultimately help to improve company performance.

I will of course provide you with a management report of my results, and I will also personally make a donation to a charity of your choice for participating in the research.

If you are willing to participate in this research please complete the enclosed form and return it in the pre-paid envelope provided. If you could do this by the **1st October 2012**, I would be most grateful.

The research will involve you, and a relevant colleague of your choice, each completing a questionnaire which will be sent in a few weeks' time. I do appreciate that your time is most valuable, and the questionnaires are designed to be quick and straight forward to complete. All of the questions concern your personal views, so you will not need to search for further information. Enclosed is an overview of my study, and if you would like to discuss this research in person please feel free to contact me on 07595 970998 or shepheng@aston.ac.uk.

If there is another member of your senior management team who you feel is better placed to participate in this research, I would be most grateful if you could pass this correspondence on to them.

All information provided will be treated in the strictest confidence and no analysis will be conducted on individual companies. Furthermore, none of the surveys will be shared with any third party. The research is being conducted in strict accordance with the Aston University Research Ethics Committee.

Your help is vital for me to be able to successfully complete my PhD, and therefore I can assure you that any help you can provide will be greatly appreciated.

Yours sincerely,

Neil Shepherd
PhD student,
Aston Business School, Aston University.

APPENDIX 3: STUDY OVERVIEW SENT TO PROSPECTIVE PARTICIPANTS

Study Overview - Strategic Decision-Making in the 21st Century

About Me

My name is Neil Shepherd and I am a PhD student at Aston Business School, Aston University in Birmingham. My research is funded by the Economic and Social Research Council (the UK body responsible for funding research on economic and social issues). The research is being supervised by Dr. John Rudd, Senior Lecturer and head of the Marketing Research Group at Aston Business School.

About the Research

Very little research has been done to investigate the factors that contribute to the success of strategic decisions. What is clear, however, is that strategic decisions matter. They matter because they affect the long-term future of the company and with it, the livelihoods of employees and the investments of the shareholders.

My research is attempting to understand the process through which companies make strategic decisions. I am seeking to learn how decision-makers cope with uncertainty over competitor actions and customer demands; how they cope with limited information and with the power struggles and politics of high-stakes decision-making, in order to make effective choices for the company.

I am also eager to ascertain what it is that determines whether the decision is effective or not. Is it the decision-makers, and their level of experience? Is it the favourability of the industry? Is it the nature of the decision itself, as some are inherently more risky than others? Or is it the characteristics of the company, such as the level of resources available to commit to a particular decision?

What the Research Involves

You and a relevant senior colleague of your choice will be requested to each complete a questionnaire in relation to a strategic decision that your company has made in recent years. The colleague will need to be a senior member of the company who was directly involved in making the strategic decision. By getting the views of two people I can get a more accurate picture of what happened in the making of the decision, as opposed to just relying on one person's perspective. The main questionnaire takes approximately 20 minutes to complete. The questionnaire intended for your colleague is significantly shorter and will take around 10 minutes to complete. The questions relate to your personal views and perceptions, so there will be no need for you to search out further information. I will send two pre-paid envelopes, so that both respondents can post back the questionnaires separately and in confidence.

Confidentiality

All information provided will be treated in the strictest confidence, and the research is being conducted in strict accordance with the Aston University Research Ethics Committee. No analysis will be conducted on individual companies. The purpose of the study is to identify trends and patterns from a set of data in order to highlight common causes of effective or ineffective decisions. The purpose of the research is **NOT** to study individual companies. It will not be possible to identify individual companies from the analysis. The questionnaires will not be shared with any third party.

Benefits of Participation

Your help is vital in order for me to be able to successfully complete my PhD. Quite simply without any questionnaires, I will be unable to complete my studies. The knowledge gained from this study should help to pinpoint the factors that contribute to successful and unsuccessful strategic decisions. As such, you will be contributing to research that has the potential to improve company performance. By taking part in this research you will be entitled to a management report detailing the important findings of the study. Furthermore, to show how grateful I am for helping me with this study I will personally make a donation to a charity of your choice, for each questionnaire that I receive back.

APPENDIX 4: PARTICIPATION REQUEST FORM SENT TO PROSPECTIVE PARTICIPANTS

Aston University
Birmingham

Participation Form - Strategic Decision-Making in the 21st Century

- Please complete all questions on this form if you are willing to participate in this PhD research project.
- Once you have completed the form, please return it using the pre-paid envelope provided.
- If you have any questions relating to this research, please don't hesitate to contact me on 07595 970998 / 0121 204 3147 or shepheng@aston.ac.uk.

1. Please state your company's name:

.....

2. Please state your name and job title:

.....

3. Please indicate how you would prefer to receive the questionnaires (please tick one):

Post	
E-mail (please write your e-mail address in capital letters below)	

4. Please list two strategic decisions that your company has made in recent years; one which turned out to be successful and one which was unsuccessful or only moderately successful. The decisions must have been fully implemented, so that you can judge the outcomes. When I send you the questionnaires, I will select one of the decisions and request that the questionnaires are completed in relation to that decision. This is to ensure that I get a mix of decisions. If you are unable to state both a successful and unsuccessful/moderately successful decision, please just list decisions that you would prefer to complete the questionnaire in relation to.

Description of Decision *(please very briefly describe the decision e.g. Launched new product/service, acquisition/joint venture/disposal, new market entry, company restructuring, new plant or premises, discontinuing a product/service, asset reduction etc.)*	**Successful Decision** (please tick)	**Unsuccessful or moderately successful decision** (please tick)
Decision 1		
Decision 2		

APPENDIX 5: COVERING LETTER SENT WITH QUESTIONNAIRES

NAME
ADDRESS 1
ADDRESS 2
ADDRESS 3
ADDRESS 4
ADDRESS 5
ADDRESS 6
ADDRESS 7

Strategic Decision-Making in the 21st Century

Dear X,

Thank you for agreeing to participate in my PhD research. Your help is vital for me to be able to successfully complete my PhD, and I can assure you that your assistance is greatly appreciated.

Enclosed are two questionnaires; one for you to complete entitled “Main Respondent Questionnaire” and one for a colleague of your choice to complete entitled “Second Respondent Questionnaire”. Please complete the questionnaires in relation to the decision detailed below, which you described on the participation form.

Strategic Decision:

Also enclosed are two pre-paid envelopes so that the questionnaires can be returned separately. I would be most grateful if you and your colleague could complete and return the questionnaires by the **9th November 2012**.

If you or your colleague have any questions at all, please feel free to contact me on 07595 970998 or shepheng@aston.ac.uk. I do appreciate that your time is most valuable, and the questionnaires are designed to be quick and straight forward to complete. All of the questions concern your personal views, so you will not need to search for further information.

I will of course provide you with a management report of my results, and I will also personally make a donation to a charity of your choice for participating in the research. All information provided will be treated in the strictest confidence and no analysis will be conducted on individual companies. Furthermore, none of the surveys will be shared with any third party. The research is being conducted in strict accordance with the Aston University Research Ethics Committee.

Once again, thank you for your help.

Yours sincerely,

Neil Shepherd
PhD student,
Aston Business School, Aston University.

APPENDIX 6: REMINDER LETTER

NAME
ADDRESS 1
ADDRESS 2
ADDRESS 3
ADDRESS 4
ADDRESS 5
ADDRESS 6
ADDRESS 7

Strategic Decision-Making in the 21st Century

Dear X,

Recently you should have received an email with two questionnaires attached in relation to my PhD research project at Aston University.

In order for me to complete my PhD, I really need those that have kindly agreed to participate in the research to complete the questionnaires that I emailed.

I would therefore be most grateful if you and a relevant colleague of your choice could complete the questionnaires that I emailed and return them as soon as possible. Please complete the questionnaires in relation to the following decision, which you described on the participation form:

Strategic Decision:

If you did not receive my original email please contact me at **shepheng@aston.ac.uk** or phone me on **07595 970998** and I will be only too glad to re-send the questionnaires.

I will of course provide you with a management report of my results, and I will also personally make a donation to a charity of your choice for participating in the research. The questionnaires are designed to be quick and straight forward to complete, and all information provided will be treated in the strictest confidence.

Your help is vital for me to be able to complete my PhD, and therefore I can assure you that your assistance with this research is greatly appreciated.

Yours sincerely,

Neil Shepherd
PhD student,
Aston Business School, Aston University.

APPENDIX 7: THE MAIN INFORMANT QUESTIONNAIRE

Strategic Decision-Making in the 21st Century

Main Respondent Questionnaire

Research Conducted by Mr. Neil G. Shepherd (PhD student)
Aston Business School
Marketing Group
2nd Floor
Room ABS 236
Aston University
Aston Triangle
Birmingham
B4 7ET

Telephone: 0121 204 3147
Mobile: 07595 970998
Email: shepheng@aston.ac.uk

- **<u>Please be assured that:</u>**

1. Your responses will be kept entirely confidential, anonymous, and secure.

2. Individual surveys will not be analysed nor shared with any third party.

3. The research is being conducted in strict accordance with the procedures set out by the Aston University Research Ethics Committee.

4. If you have any questions concerning this research, please contact me at the details provided on the cover page of this questionnaire.

- If you are interested in receiving a management report on the findings of this research please tick the box below.

☐

- As a gesture of my gratitude to you for helping with this research, I would like to **personally** make a £1 donation to charity for each completed questionnaire. I am hoping to receive around 300 fully completed questionnaires, meaning that the charities listed below can directly benefit from this research. Please select **<u>one</u>** charity from the list below.

	Tick chosen charity
Cancer Research UK (www.cancerresearch.org.uk)	
NSPCC (www.nspcc.org.uk)	
RSPCA (www.rspca.org.uk)	
Midlands Air Ambulance Charity (www.midlandsairambulance.com)	

Instructions:

- **Please answer this questionnaire relating to the decision described in the accompanying letter.**
- **Please answer all questions and statements in sections A-G of this questionnaire.**
- **I am interested in what happened during the making of a recent strategic decision in your company, as specified in the letter accompanying this questionnaire. In your responses, please describe exactly what happened during the making of the decision; not what you feel is the right answer or you believe should have happened.**
- **Your responses will be completely anonymous and confidential.**

Section A: The Strategic Decision

The decision specified in the accompanying letter will be the focus of the questions throughout.

Q1. Please briefly provide some background to the decision in the space below, in as much detail as you are comfortable providing:

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

Please turn over the page.

- **Please answer the remainder of this questionnaire in relation to the decision just described.**
- **The following questions relate to whoever was involved in the making of the decision just described, whether that was one person or a team of decision-makers.**

Q2. In which year was this decision made (please tick one)?

2012	
2011	
2010	
2009	
Other (please state year)	

Q3. Please state the number of participants who had a significant involvement in making this decision:

.....

Q4. Please circle the most appropriate number, according to **how this decision was made.**

Made by the CEO/MD alone	Made by CEO/MD in consultation with one or very few top management team members	Made by CEO/MD in consultation with most or all of the top management team members	Made by the entire top management team as a group
1	2	3	4

Q5. Please allocate 100 points based on how much influence each of the following groups had over the making of this decision.

	Points
This company's top management team	
Shareholders	
Financial institutions	
Parent company	
Government	
Other	
TOTAL	**100**

Section B: The Process of Making this Decision

Q1. Please answer each of the following questions by circling the number which most accurately describes **what happened during the process of making the decision described in section A.** Please answer **ALL of the following 8 questions in the table below:**

	Not at all						Extensively
1. How extensively did decision-makers look for information in making this decision?	1	2	3	4	5	6	7
2. How extensively did decision-makers analyse relevant information before making a decision?	1	2	3	4	5	6	7
3. There are some techniques which may be used by decision-makers to get more information for taking a decision (e.g. performing quantitative analysis, conducting feasibility studies, using consultants etc). To what extent did the decision-makers rely on such techniques in making this decision?	1	2	3	4	5	6	7
4. To what extent did the decision-makers rely mostly on personal judgment in making this decision?	1	2	3	4	5	6	7
5. To what extent did decision-makers depend on a 'gut-feeling' to make this decision?	1	2	3	4	5	6	7
6. Did decision-makers trust their hunches in making this decision?	1	2	3	4	5	6	7
7. Did decision-makers put a lot of faith in their initial feelings about how to proceed with this decision?	1	2	3	4	5	6	7
8. Did decision-makers put more emphasis on feelings than data in making this decision?	1	2	3	4	5	6	7

Q2. How effective were decision-makers at focusing their attention on crucial information and ignoring irrelevant information?

Not at all effective						Very effective
1	2	3	4	5	6	7

Q3. Please describe the process that had the most influence on this decision:

Mostly analytical						Mostly intuitive
1	2	3	4	5	6	7

Q4. Were decision-makers primarily preoccupied by their own individual interests, or did they act in the interests of the company?

Company's interests completely						Individual interests completely
1	2	3	4	5	6	7

Q5. To what extent did the decision-makers do the following in making this decision: (Please circle the relevant number for **each of the following 5 statements**)

	Not at all						To a great extent
1. Develop many alternative courses of action to achieve the intended objectives?	1	2	3	4	5	6	7
2. Consider many different criteria before deciding on which courses of action to take?	1	2	3	4	5	6	7
3. Thoroughly examine multiple explanations for the problems faced and opportunities available?	1	2	3	4	5	6	7
4. Search extensively for possible alternative courses of action?	1	2	3	4	5	6	7
5. Conduct multiple examinations of suggested courses of action?	1	2	3	4	5	6	7

Q6. Please describe **what happened during the process of making this decision** by answering **ALL of the following 6 questions in the table below. To what extent...**

	Not at all						Extensively
1. Were decision-makers open with each other about their interests and preferences related to the decision?	1	2	3	4	5	6	7
2. Did the decision-makers use their power to defend their interests and preferences?	1	2	3	4	5	6	7
3. Was the decision affected by bargaining among decision-makers?	1	2	3	4	5	6	7
4. Did decision-makers form alliances with each other in order to get their points of view on the table?	1	2	3	4	5	6	7
5. Did decision-makers tend to hide and/or distort information to defend their points of view?	1	2	3	4	5	6	7
6. Was there variation in decision-makers' points of view between formal meetings and informal discussions?	1	2	3	4	5	6	7

Section C: The Nature of the Decision

Q1. How often do decisions of this type arise in your company?

Very seldom						Very often
1	2	3	4	5	6	7

Q2. To what extent did the decision-makers feel familiar with handling decisions of this type?

Completely unfamiliar						Completely familiar
1	2	3	4	5	6	7

Q3. To what extent was this decision similar to others that the decision-makers have dealt with in the past?

Very different						Very similar
1	2	3	4	5	6	7

Q4. Please circle the most appropriate number for **each of the following 5 statements**, according to whether you agree with the statement or not:

	Absolutely false	Very false	Somewhat false	Neither false nor true	Somewhat true	Very true	Absolutely true
1. This decision put strict time-pressure on the decision-makers	1	2	3	4	5	6	7
2. In general there was extreme time-pressure to take an immediate decision	1	2	3	4	5	6	7
3. It was very difficult to predict the outcomes of this decision	1	2	3	4	5	6	7
4. We were very uncertain about the actions that should be taken in order to make this decision	1	2	3	4	5	6	7
5. It was not at all clear what kind of information we should collect to make this decision	1	2	3	4	5	6	7

Q5. Please indicate the impact on **each of the following 8 areas** that this decision was **initially** expected to have, by circling the appropriate number:

	Very little Impact						Very significant impact
1. Profit	1	2	3	4	5	6	7
2. Quality of products/services	1	2	3	4	5	6	7
3.Production / service delivery	1	2	3	4	5	6	7
4. Costs	1	2	3	4	5	6	7
5. Sales and marketing	1	2	3	4	5	6	7
6. Market share	1	2	3	4	5	6	7
7. The need to change existing programmes of activity (e.g. sales & marketing plans, recruitment plans etc.)	1	2	3	4	5	6	7
8. Overall adjustment to the company required to serve the decision	1	2	3	4	5	6	7

Section D: The Outcomes of the Decision

Q1. Please state how **many months** it took from the first deliberate consideration of the decision (e.g. scheduling a meeting or searching for information) to when a commitment to act was made:

.....

Q2. Please answer the following 3 statements:

	Very strongly disagree						Very strongly agree
1. Relative to rivals, it took too long to make this decision	1	2	3	4	5	6	7
2. Given the competitive environment at the time, this decision was made quickly	1	2	3	4	5	6	7
3. This decision was made quickly	1	2	3	4	5	6	7

Q3. Please **rate this decision**, according to: (Please answer **ALL 3** statements)

	Very Poor						Excellent
1. The quality of this decision relative to its original intent	1	2	3	4	5	6	7
2. The quality of this decision given its effect on company performance	1	2	3	4	5	6	7
3. The overall quality of this decision	1	2	3	4	5	6	7

Q4. Please circle the most appropriate number for **each of the following 3 questions**, according to **how the decision-makers responded to the decision**.

	Very Little						A great deal
1. How much were decision-makers willing to do to see that the decision was properly implemented?	1	2	3	4	5	6	7
2. Did this particular decision inspire the decision-makers to work hard or enthusiastically?	1	2	3	4	5	6	7
3. How much did the decision-makers believe that the decision would enhance the company's overall performance?	1	2	3	4	5	6	7

Q5. How consistent was the final decision with decision-makers' personal priorities and interests?

Not at all consistent						Absolutely consistent
1	2	3	4	5	6	7

Q6. How pleased were the decision-makers that this particular decision was chosen over all of the potential alternatives?

Not at all pleased						Very pleased
1	2	3	4	5	6	7

Q7. To what extent did the decision-makers believe that this decision represented the best of all possible alternatives?

Worst of all alternatives						Best of all alternatives
1	2	3	4	5	6	7

Q8. Please circle the most appropriate number for **each of the following 5 statements**, which relate to the **implementation** of this decision.

	Very strongly disagree						Very strongly agree
1. This decision was an example of effective decision implementation	1	2	3	4	5	6	7
2. The implementation effort for this decision was excellent	1	2	3	4	5	6	7
3. The implementation of this decision was generally considered a great success in the company	1	2	3	4	5	6	7
4. The decision-makers think that the implementation of this decision was a success	1	2	3	4	5	6	7
5. The implementation of this decision was considered a success in my area of the company	1	2	3	4	5	6	7

Section E: Your Company's Operating Environment

Q1. Please describe the business environment in which your company was operating, **at the time that the decision was made.** If the company was operating in a number of different markets please select the main market most relevant to the decision in question and answer the statements for that market only. **Please circle the relevant number for each of the following 6 statements:**

	Strongly disagree						Strongly agree
1. My business must rarely change its marketing practices to keep up with competitors	1	2	3	4	5	6	7
2. The rate at which products/services are becoming obsolete in my industry is very slow	1	2	3	4	5	6	7
3. Actions of competitors are quite easy to predict	1	2	3	4	5	6	7
4. The set of competitors in my industry has remained relatively constant over the last 3 years	1	2	3	4	5	6	7
5. Product/service demand is easy to forecast	1	2	3	4	5	6	7
6. Customer requirements/preferences are easy to forecast	1	2	3	4	5	6	7

Q2. Please describe the characteristics of the business environment in which your company operated **at the time of making this decision.** Please circle the relevant number for **each of the 3 following pairs of statements:**

1. Very safe; little threat to survival and well-being of the company	1	2	3	4	5	6	7	Very risky; a false step can mean the company's undoing.
2. Rich in investment and marketing opportunities; not at all stressful	1	2	3	4	5	6	7	Very stressful, exacting, hostile; very hard to keep afloat.
3. An environment that your company can control and manipulate to its own advantage, (e.g. a dominant company in an industry with little competition and few hindrances)	1	2	3	4	5	6	7	A dominating environment, in which your company's initiatives count for very little against the tremendous forces of your business or political environment.

Section F: The Decision-Makers

Q1. At the time of making this decision, to what extent did the decision-makers agree or disagree with each other about the following: (Please answer **each of the following 4 statements**).

	We strongly disagreed						We strongly agreed
1. The best way to maximise the company's long term profitability?	1	2	3	4	5	6	7
2. What the company's goal priorities should be?	1	2	3	4	5	6	7
3. The best way to ensure the company's long-term survival?	1	2	3	4	5	6	7
4. Which company objectives should be considered most important?	1	2	3	4	5	6	7

Please turn over the page

Q2. How did the decision-makers behave during the making of this decision? Please answer each of the **following 9 statements:**

	Very strongly disagree						Very strongly agree
1. When a decision-maker was busy, other decision-makers often volunteered to help manage the workload	1	2	3	4	5	6	7
2. The decision-makers were flexible about switching responsibilities to make things easier for each other	1	2	3	4	5	6	7
3. The decision-makers were willing to help each other complete jobs and meet deadlines	1	2	3	4	5	6	7
4. The decision-makers usually let each other know when their actions would affect another decision-maker's work	1	2	3	4	5	6	7
5. The decision-makers had a clear understanding of the joint problems and needs of other decision-makers	1	2	3	4	5	6	7
6. The decision-makers discussed their expectations of each other	1	2	3	4	5	6	7
7. The ideas that the decision-makers exchanged were of high quality	1	2	3	4	5	6	7
8. The solutions that the decision-makers exchanged were of high quality	1	2	3	4	5	6	7
9. The dialogue among the decision-makers produced a high level of creativity and innovativeness	1	2	3	4	5	6	7

Q3. Please circle the appropriate number for **each of the following 8 statements**, which relate specifically to the people directly involved in making this decision:

	Very strongly disagree						Very strongly agree
1. The decision-makers brought with them a wealth of information gained from prior assignments within this company	1	2	3	4	5	6	7
2. The decision-makers have all had extensive feedback on previous strategic decisions that they have been involved in	1	2	3	4	5	6	7
3. The decision-makers all have extensive experience of being involved in making challenging strategic decisions	1	2	3	4	5	6	7
4. The decision-makers have a high level of expertise in making strategic decisions	1	2	3	4	5	6	7
5. The decision-makers have a track record of making effective strategic decisions	1	2	3	4	5	6	7
6. The decision-makers have learnt a lot from previous strategic decisions that they have been involved in	1	2	3	4	5	6	7

Section G: Your Details

Please note that the information requested in questions 1 and 2 below is to enable a log of respondents to ensure that you are not sent the same survey again and to avoid any unnecessary further correspondence.

1. Please state your company's registered trading name

.....

2. Please state your name and job title/position in the company

.....

3. How would you rate your involvement in this decision?

Very limited						Very extensive
1	2	3	4	5	6	7

4. How would you rate your confidence in answering this questionnaire?

Not at all confident						Very confident
1	2	3	4	5	6	7

Thank you very much for taking the time to complete this questionnaire. Without your help, it would not be possible for me to complete my PhD.

Please return this questionnaire using the pre-paid envelope provided.

Please feel free to add any further information that you consider to be relevant or write any comments below that you have concerning this questionnaire or the study in general.

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- If you would like to receive a management report on the findings of this research, and a charitable donation to be made on your behalf, please ensure that you have entered the relevant details on page 2 of this survey.

APPENDIX 8: THE SECOND INFORMANT QUESTIONNAIRE

Strategic Decision-Making in the 21st Century

Second Respondent Questionnaire

Research Conducted by Mr. Neil G. Shepherd (PhD student)
Aston Business School
Marketing Group
2nd Floor
Room ABS 236
Aston University
Aston Triangle
Birmingham
B4 7ET

Telephone: 0121 204 3147
Mobile: 07595 970998
Email: shepheng@aston.ac.uk

➢ **Please be assured that:**

1. Your responses will be kept entirely confidential, anonymous, and secure.

2. Individual surveys will not be analysed nor shared with any third party.

3. The research is being conducted in strict accordance with the procedures set out by the Aston University Research Ethics Committee.

4. If you have any questions concerning this research, please contact me at the details provided on the cover page of this questionnaire.

Instructions:

- **Please answer this questionnaire relating to the decision described in the accompanying letter.**
- **Please answer all questions and statements in this questionnaire.**
- **I am interested in what happened during the making of a recent strategic decision in your company, as specified in the letter accompanying this questionnaire. In your responses, please describe exactly what happened during the making of the decision; not what you feel is the right answer or you believe should have happened.**
- **Your responses will be completely anonymous and confidential.**

The decision specified in the letter accompanying this questionnaire will be the focus of the questions throughout.

Q1. Please briefly provide some background to the decision in the space below, in as much detail as you are comfortable providing:

.....

.....

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.....

.....

- **Please answer the remainder of this questionnaire in relation to the decision just described.**
- **The following questions relate to whoever was involved in the making of the decision just described, whether that was one person or a team of decision-makers.**

Q2. Please answer each of the following questions by circling the number which most accurately describes **what happened during the process of making the decision described in question 1.** Please answer **ALL of the following 8 questions in the table below:**

	Not at all						Extensively
1. How extensively did decision-makers look for information in making this decision?	1	2	3	4	5	6	7
2. How extensively did decision-makers analyse relevant information before making a decision?	1	2	3	4	5	6	7
3. There are some techniques which may be used by decision-makers to get more information for taking a decision (e.g. performing quantitative analysis, conducting feasibility studies, using consultants etc). To what extent did the decision-makers rely on such techniques in making this decision?	1	2	3	4	5	6	7
4. To what extent did the decision-makers rely mostly on personal judgment in making this decision?	1	2	3	4	5	6	7
5. To what extent did decision-makers depend on a 'gut-feeling' to make this decision?	1	2	3	4	5	6	7
6. Did decision-makers trust their hunches in making this decision?	1	2	3	4	5	6	7
7. Did decision-makers put a lot of faith in their initial feelings about how to proceed with this decision?	1	2	3	4	5	6	7
8. Did decision-makers put more emphasis on feelings than data in making this decision?	1	2	3	4	5	6	7

Q3. How effective were decision-makers at focusing their attention on crucial information and ignoring irrelevant information?

Not at all effective						Very effective
1	2	3	4	5	6	7

Q4. Please describe the process that had the most influence on this decision:

Mostly analytical						Mostly intuitive
1	2	3	4	5	6	7

Q5. Were decision-makers primarily preoccupied by their own individual interests, or did they act in the interests of the company?

Company's interests completely						Individual interests completely
1	2	3	4	5	6	7

Q6. To what extent did the decision-makers do the following in making this decision: (Please circle the relevant number for **each of the following 5 statements**)

	Not at all						To a great extent
1. Develop many alternative courses of action to achieve the intended objectives?	1	2	3	4	5	6	7
2. Consider many different criteria before deciding on which courses of action to take?	1	2	3	4	5	6	7
3. Thoroughly examine multiple explanations for the problems faced and opportunities available?	1	2	3	4	5	6	7
4. Search extensively for possible alternative courses of action?	1	2	3	4	5	6	7
5. Conduct multiple examinations of suggested courses of action?	1	2	3	4	5	6	7

Q7. Please describe **what happened during the process of making this decision** by answering **ALL of the following 6 questions in the table below. To what extent...**

	Not at all						Extensively
1. Were decision-makers open with each other about their interests and preferences related to the decision?	1	2	3	4	5	6	7
2. Did the decision-makers use their power to defend their interests and preferences?	1	2	3	4	5	6	7
3. Was the decision affected by bargaining among decision-makers?	1	2	3	4	5	6	7
4. Did decision-makers form alliances with each other in order to get their points of view on the table?	1	2	3	4	5	6	7
5. Did decision-makers tend to hide and/or distort information to defend their points of view?	1	2	3	4	5	6	7
6. Was there variation in decision-makers' points of view between formal meetings and informal discussions?	1	2	3	4	5	6	7

Q8. How did the decision-makers behave during the making of this decision? Please answer each of the **following 9 statements:**

	Very strongly disagree						Very strongly agree
1. When a decision-maker was busy, other decision-makers often volunteered to help manage the workload	1	2	3	4	5	6	7
2. The decision-makers were flexible about switching responsibilities to make things easier for each other	1	2	3	4	5	6	7
3. The decision-makers were willing to help each other complete jobs and meet deadlines	1	2	3	4	5	6	7
4. The decision-makers usually let each other know when their actions would affect another decision-maker's work	1	2	3	4	5	6	7
5. The decision-makers had a clear understanding of the joint problems and needs of other decision-makers	1	2	3	4	5	6	7
6. The decision-makers discussed their expectations of each other	1	2	3	4	5	6	7
7. The ideas that the decision-makers exchanged were of high quality	1	2	3	4	5	6	7
8. The solutions that the decision-makers exchanged were of high quality	1	2	3	4	5	6	7
9. The dialogue among the decision-makers produced a high level of creativity and innovativeness	1	2	3	4	5	6	7

Q9. Please state how **many months** it took from the first deliberate consideration of the decision (e.g. scheduling a meeting or searching for information) to when a commitment to act was made:

.....

Q10. Please answer the following 3 statements:

	Very strongly disagree						Very strongly agree
1. Relative to rivals, it took too long to make this decision	1	2	3	4	5	6	7
2. Given the competitive environment at the time, this decision was made quickly	1	2	3	4	5	6	7
3. This decision was made quickly	1	2	3	4	5	6	7

Q11. Please **rate this decision**, according to: (Please answer **ALL 3** statements)

	Very Poor						Excellent
1. The quality of this decision relative to its original intent	1	2	3	4	5	6	7
2. The quality of this decision given its effect on company performance	1	2	3	4	5	6	7
3. The overall quality of this decision	1	2	3	4	5	6	7

Q12. Please circle the most appropriate number for **each of the following 3 questions**, according to **how the decision-makers responded to the decision**.

	Very Little						A great deal
1. How much were decision-makers willing to do to see that the decision was properly implemented?	1	2	3	4	5	6	7
2. Did this particular decision inspire the decision-makers to work hard or enthusiastically?	1	2	3	4	5	6	7
3. How much did the decision-makers believe that the decision would enhance the company's overall performance?	1	2	3	4	5	6	7

Q13. How consistent was the final decision with decision-makers' personal priorities and interests?

Not at all consistent						Absolutely consistent
1	2	3	4	5	6	7

Q14. How pleased were the decision-makers that this particular decision was chosen over all of the potential alternatives?

Not at all pleased						Very pleased
1	2	3	4	5	6	7

Q15. To what extent did the decision-makers believe that this decision represented the best of all possible alternatives?

Worst of all alternatives						Best of all alternatives
1	2	3	4	5	6	7

Q16. Please circle the most appropriate number for **each of the following 5 statements**, which relate to the **implementation** of this decision.

	Very strongly disagree						Very strongly agree
1. This decision was an example of effective decision implementation	1	2	3	4	5	6	7
2. The implementation effort for this decision was excellent	1	2	3	4	5	6	7
3. The implementation of this decision was generally considered a great success in the company	1	2	3	4	5	6	7
4. The decision-makers think that the implementation of this decision was a success	1	2	3	4	5	6	7
5. The implementation of this decision was considered a success in my area of the company	1	2	3	4	5	6	7

Please note that the information requested in questions 17 and 18 below is to enable a log of respondents to ensure that you are not sent the same survey again and to avoid any unnecessary further correspondence.

Q17. Please state your company's registered trading name

.....

Q18. Please state your name and job title/position in the company

.....

Q19. How would you rate your involvement in this decision?

Very limited						Very extensive
1	2	3	4	5	6	7

Q20. How would you rate your confidence in answering this questionnaire?

Not at all confident						Very confident
1	2	3	4	5	6	7

Thank you very much for taking the time to complete this questionnaire. Without your help, it would not be possible for me to complete my PhD.

Please return this questionnaire using the pre-paid envelope provided.

APPENDIX 9: DISCRIMINANT VALIDITY—AVERAGE VARIANCE EXTRACTED AND SHARED VARIANCE

APPENDIX 9. Test of Discriminant Validity: Summary of Average Variance Extracted and Shared Variance

	AVE	Rat	Comp	BI	Int	Pol	Qual	Impl	Impl revised	Comm	Comm revised	Speed	Expertise	Cog Div	Power Dec	Fam	Press	Uncer	MOI	Dyn	Host	Ext Con	Size	Perf	Slack
Rat	0.52	1	0.39	0.17	0.38	0.02	0.21	0.28	0.22	0.16	0.07	0.00	0.17	0.10	0.02	0.00	0.04	0.07	0.02	0.00	0.01	0.00	0.00	0.00	0.02
Comp	0.66	0.39	1	0.10	0.22	0.00	0.08	0.10	0.08	0.07	0.05	0.00	0.09	0.07	0.02	0.00	0.01	0.01	0.01	0.02	0.05	0.03	0.00	0.00	0.00
BI	0.56	0.17	0.10	1	0.05	0.13	0.17	0.29	0.24	0.21	0.12	0.08	0.23	0.19	0.02	0.02	0.01	0.08	0.02	0.03	0.00	0.01	0.00	0.00	0.00
Int	0.56	0.38	0.22	0.05	1	0.02	0.06	0.07	0.04	0.02	0.01	0.00	0.06	0.01	0.01	0.01	0.00	0.10	0.01	0.01	0.00	0.01	0.02	0.00	0.00
Pol	0.36	0.02	0.00	0.13	0.02	1	0.05	0.06	0.03	0.02	0.00	0.04	0.04	0.02	0.03	0.03	0.01	0.03	0.00	0.01	0.01	0.06	0.00	0.00	0.00
Qual	0.83	0.21	0.08	0.17	0.06	0.05	1	0.74	0.75	0.38	0.30	0.04	0.07	0.09	0.01	0.01	0.01	0.08	0.06	0.01	0.00	0.01	0.00	0.00	0.02
Imp	0.73	0.28	0.10	0.29	0.07	0.06	0.74	1	0.94	0.44	0.33	0.08	0.18	0.17	0.00	0.02	0.03	0.11	0.10	0.02	0.00	0.01	0.00	0.00	0.01
Impl revised	0.85	0.22	0.08	0.24	0.04	0.03	0.75	0.94	1	0.46	0.36	0.06	0.14	0.19	0.00	0.01	0.03	0.09	0.11	0.01	0.01	0.00	0.00	0.00	0.02
Comm	0.42	0.16	0.07	0.21	0.02	0.02	0.38	0.44	0.46	1	0.81	0.05	0.11	0.22	0.00	0.02	0.03	0.02	0.05	0.00	0.01	0.00	0.00	0.00	0.01
Comm revised	0.56	0.07	0.05	0.12	0.01	0.00	0.30	0.33	0.36	0.81	1	0.03	0.07	0.25	0.00	0.02	0.01	0.02	0.04	0.00	0.00	0.00	0.00	0.00	0.01
Speed	0.60	0.00	0.00	0.08	0.00	0.04	0.04	0.08	0.06	0.05	0.03	1	0.00	0.02	0.02	0.00	0.08	0.04	0.06	0.00	0.00	0.00	0.00	0.00	0.00
Expertise	0.63	0.17	0.09	0.23	0.06	0.04	0.07	0.18	0.14	0.11	0.07	0.00	1	0.12	0.04	0.14	0.00	0.05	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Cog Div	0.74	0.10	0.07	0.19	0.01	0.02	0.09	0.17	0.19	0.22	0.25	0.02	0.12	1	0.00	0.01	0.00	0.02	0.06	0.00	0.00	0.00	0.00	0.00	0.00
Power Dec	N/A	0.02	0.02	0.02	0.01	0.03	0.01	0.00	0.00	0.00	0.00	0.02	0.04	0.00	1	0.01	0.01	0.02	0.00	0.00	0.01	0.00	0.00	0.02	0.0006
Fam	0.55	0.00	0.00	0.02	0.01	0.03	0.01	0.02	0.01	0.02	0.02	0.00	0.14	0.01	0.01	1	0.02	0.07	0.01	0.00	0.00	0.03	0.01	0.00	0.00
Press	0.70	0.04	0.01	0.01	0.00	0.01	0.01	0.03	0.03	0.03	0.01	0.08	0.00	0.00	0.01	0.02	1	0.00	0.07	0.03	0.01	0.02	0.00	0.00	0.00
Uncer	0.46	0.07	0.01	0.08	0.10	0.03	0.08	0.11	0.09	0.02	0.02	0.04	0.05	0.02	0.02	0.07	0.00	1	0.00	0.00	0.00	0.00	0.02	0.00	0.00
MOI	0.23	0.02	0.01	0.02	0.01	0.00	0.06	0.10	0.11	0.05	0.04	0.06	0.00	0.06	0.00	0.01	0.07	0.00	1	0.03	0.00	0.00	0.00	0.01	0.02
Dyn	0.37	0.00	0.02	0.03	0.01	0.01	0.01	0.02	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.03	0.00	0.03	1	0.03	0.01	0.02	0.01	0.00
Host	0.57	0.01	0.05	0.00	0.00	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.03	1	0.03	0.01	0.02	0.00
Ext Con	N/A	0.00	0.03	0.01	0.01	0.06	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.02	0.00	0.00	0.01	0.03	1	0.00	0.00	0.01
Size	N/A	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.02	0.00	0.02	0.01	0.00	1	0.02	0.00
Perf	N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.01	0.01	0.02	0.00	0.02	1	0.00
Slack	N/A	0.02	0.00	0.00	0.00	0.00	0.02	0.01	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.01	0.00	0.00	1

APPENDIX 10: INTRACLASS CORRELATIONS

APPENDIX 10. Summary of Intraclass Correlations at Item and Construct Level

Measure	Correlation	Significance
Rationality	0.528	0.000
Rationality item 1	0.578	0.000
Rationality item 2	0.475	0.000
Rationality item 3	0.403	0.000
Rationality item 4	0.429	0.000
Rationality item 5	0.419	0.000
Comprehensiveness	0.539	0.000
Comprehensiveness item 1	0.448	0.000
Comprehensiveness item 2	0.412	0.000
Comprehensiveness item 3	0.349	0.000
Comprehensiveness item 4	0.534	0.000
Comprehensiveness item 5	0.443	0.000
Behavioural Integration	0.282	0.001
Behavioural Integration item 1	0.295	0.000
Behavioural Integration item 2	0.264	0.002
Behavioural Integration item 3	0.199	0.016
Behavioural Integration item 4	0.106	0.127
Behavioural Integration item 5	0.241	0.005
Behavioural Integration item 6	0.224	0.008
Behavioural Integration item 7	0.327	0.000
Behavioural Integration item 8	0.376	0.000
Behavioural Integration item 9	0.312	0.000
Intuition	0.403	0.000
Intuition item 1	0.281	0.001
Intuition item 2	0.323	0.000
Intuition item 3	0.317	0.000
Intuition item 4	0.299	0.001
Intuition item 5	0.369	0.000
Political Behaviour	0.441	0.000
Political Behaviour item 1	0.244	0.004
Political Behaviour item 2	0.370	0.000
Political Behaviour item 3	0.286	0.001
Political Behaviour item 4	0.215	0.009
Political Behaviour item 5	0.330	0.000
Political Behaviour item 6	0.373	0.000
Political Behaviour item 7	0.313	0.000
SD Quality	0.702	0.000
SD Quality item 1	0.485	0.000
SD Quality item 2	0.692	0.000
SD Quality item 3	0.688	0.000
Implementation Success	0.631	0.000
Implementation success item 1	0.513	0.000

Implementation success item 2	0.557	0.000
Implementation success item 3	0.646	0.000
Commitment	0.358	0.000
Commitment item 1	0.183	0.024
Commitment item 2	0.450	0.000
Commitment item 3	0.354	0.000
SD Speed	0.481	0.000
SD speed item 1	0.344	0.000
SD speed item 2	0.407	0.000
SD speed item 3	0.438	0.000